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Water Resources for Data South Dakota Water Year 1982

(U.S.) Geological Survey, Huron, SD

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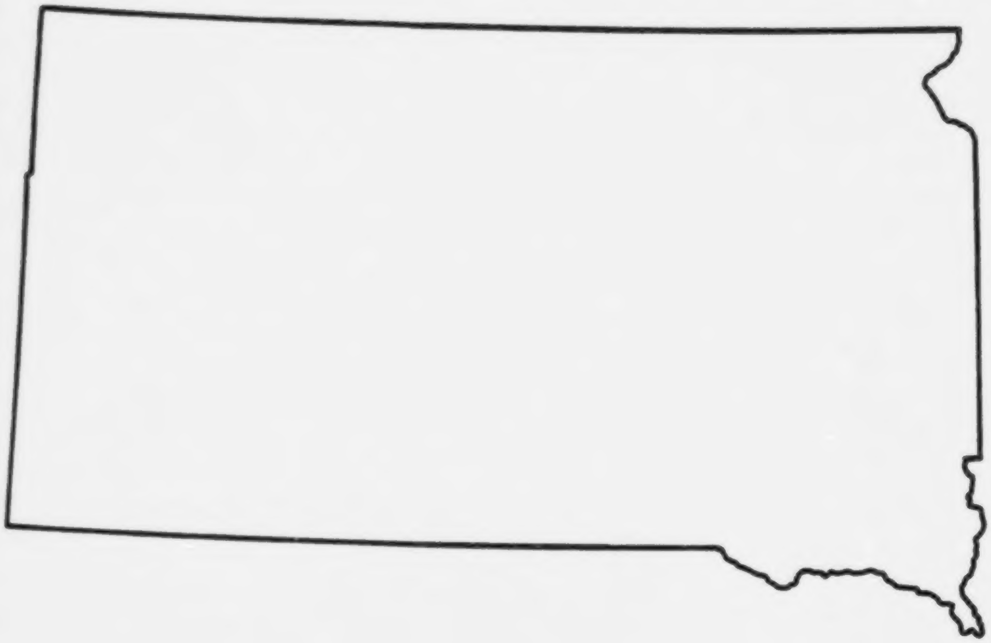
U.S. Department of Commerce
National Technical Information Service
NTIS

PB84-117175

DEPARTMENT OF THE INTERIOR
March 3 1849

Water Resources Data South Dakota

Water Year 1982



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT SD-82-1
Prepared in cooperation with the State of South Dakota
and with other agencies

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NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

CALENDAR FOR WATER YEAR 1982

1981

OCTOBER

S	M	T	W	T	F	S
				1	2	3
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11	12	13	14	15	16	17
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25	26	27	28	29	30	31

NOVEMBER

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1982

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28						

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23	24	25	26	27	28	29
30	31					

JUNE

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JULY

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AUGUST

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29	30	31				

SEPTEMBER

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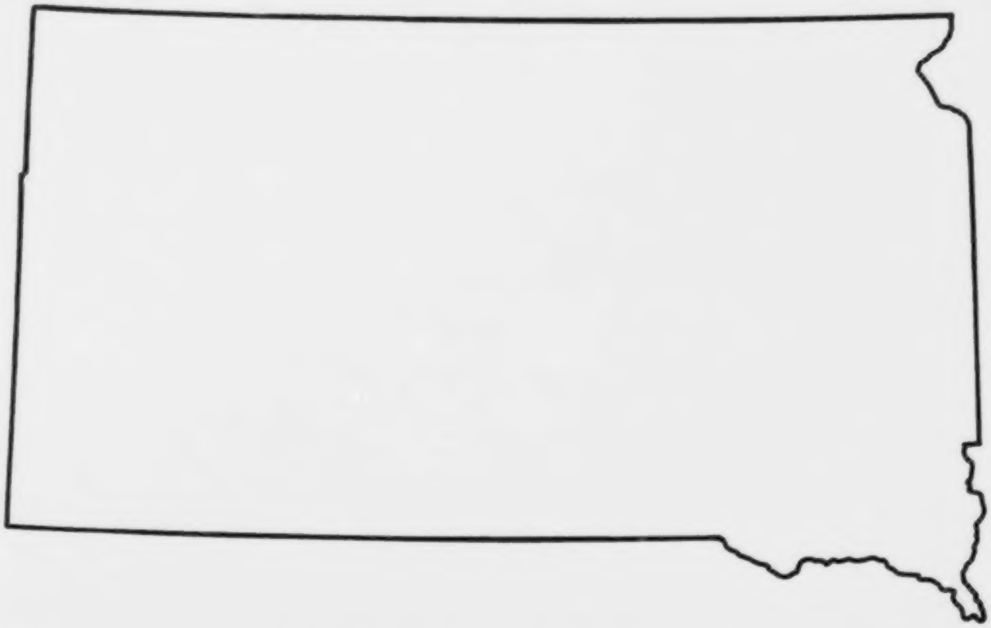
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DEPARTMENT OF THE INTERIOR
March 3, 1849

Water Resources Data South Dakota

Water Year 1982

by E.B. Hoffman, N.F. Leibbrand, D.R. Winter, and J.R. Little



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT SD-82-1
Prepared in cooperation with the State of South Dakota
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in South Dakota write to
District Chief, Water Resources Division
U.S. Geological Survey
Room 317, Federal Building
200 4th St. S.W.
Huron, South Dakota 57350

1983

PREFACE

This report is one of a series issued by state. General direction for the series is by Phillip Cohen, Chief Hydrologist, U.S. Geological Survey, James E. Biesecker, Assistant Chief Hydrologist for Scientific Publications and Data Management, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region.

This report was prepared by personnel of the South Dakota District of the Water Resources Division of the U.S. Geological Survey under the supervision of Richard E. Fidler, District Chief, and John R. Little, Chief, Hydrologic Data Collection and Analysis Section. Other South Dakota District personnel who contributed significantly to the collecting, processing and tabulating the data, and typing the manuscript were: Darwin W. Heyd, Marvin D. Stevens, Bruce E. Baker, Herbert J. Bandelman, Roman J. Bowar, Wendell L. Bradford, Michael J. Burr, Richard M. Crowfoot, Ella M. Decker, Mark E. Freese, Robert S. Herbst, Dan G. Hern, Terry K. Lockner, Debra K. Matthews, Darwin L. Rahder, Craig E. Solberg, and Gerald R. Wisnieski. It was prepared in cooperation with the State of South Dakota and with other agencies.

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Water resources data for the 1982 water year for South Dakota consists of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels in wells. This report contains discharge records for 110 gaging stations; stage and contents for 14 lakes and reservoirs; water quality for 32 gaging stations; and water levels for 8 observation wells. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements and analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in South Dakota.

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CONTENTS

Page
Preface.......... III
List of gaging stations, in downstream order, for which records are published.......... VI
Introduction.......... 1
Cooperation.......... 1
Summary of hydrologic events.......... 2
Definition of terms.......... 8
Downstream order and station numbers.......... 14
Numbering system for wells and miscellaneous sites.......... 14
Special networks and programs.......... 14
Explanation of stage and water-discharge records.......... 15
  Collection and computation of data.......... 15
  Accuracy of field data and computed results.......... 17
  Other data available.......... 17
  Records of discharge collected by agencies other than the Geological Survey.......... 17
Explanation of water-quality records.......... 18
  Collection and examination of data.......... 18
  Water analysis.......... 18
  Water temperature.......... 18
  Sediment.......... 18
Explanation of ground-water level records.......... 19
  Collection of the data.......... 19
Publications on techniques of water-resources investigations.......... 20
Gaging station records.......... 24
Miscellaneous rainfall data.......... 244
Miscellaneous discharge measurements.......... 245
Miscellaneous temperature measurements and field determinations.......... 247
Miscellaneous water quality data.......... 278
Ground-water levels.......... 285
  Ground-water level records.......... 285
  Quality of ground water.......... 289
Index.......... 295

ILLUSTRATIONS

Figure 1. Comparison of 1982 monthly mean to long-term mean discharges.......... 3
2. Comparison of 1982 monthly dissolved-solids concentrations to long-term average monthly dissolved-solids concentrations.......... 5
3. Water levels from selected observation wells.......... 6
4. System for numbering wells and miscellaneous sites.......... 14
5. Map showing location of gaging stations in South Dakota.......... 21
6. Map showing location of water-quality stations in South Dakota.......... 22
7. Map showing location of ground-water observation wells in South Dakota.......... 23

TABLES

Table 1. Comparison of current water year precipitation with average for January 1929 to December 1980, in inches.......... 2
2. Comparison of current-year maximum discharge with maximum for long-term periods.......... 4
3. Comparison of current-year minimum daily discharge with minimum for long-term periods.......... 4

[Letter after station name designates type of data: (d) discharge, (e) gage height, elevation, or contents, (c) chemical, (b) biological, (m) microbiological, (p) pesticide, (r) rainfall, (t) water temperature, (s) sediment]

MISSOURI RIVER BASIN

LITTLE MISSOURI RIVER BASIN

Page

Little Missouri River at Camp Crook (d) 24

SPRING CREEK BASIN

Spring Creek near Herreid (dc) 25

GRAND RIVER BASIN

North Fork Grand River near White Butte (d) 27
  South Fork Grand River at Buffalo (d) 28
  South Fork Grand River near Cash (d) 29
Shadehill Reservoir at Shadehill (e) 30
Grand River at Shadehill (d) 31
Grand River at Little Eagle (dcbms) 32

MOREAU RIVER BASIN

Moreau River near Faith (d) 36
Moreau River near Whitehorse (dcbms) 37

CHEYENNE RIVER BASIN

Beaver Creek:

    Beaver Creek at Mallo Camp, near Four Corners, WY (d) 40
  Stockade Beaver Creek near Newcastle, WY (d) 41
Cheyenne River at Edgemont (d) 42
  Hat Creek near Edgemont (d) 43
  Cascade Springs near Hot Springs (d) 44
  Horsehead Creek near Oelrichs (d) 45
Angostura Reservoir near Hot Springs (e) 46
Cheyenne River below Angostura Dam (d) 47
  Fall River at Hot Springs (d) 48
  Beaver Creek near Buffalo Gap (d) 49
  French Creek above Fairburn (d) 50
  Battle Creek near Keystone (d) 51
    Grace Coolidge Creek near Game Lodge, near Custer (d) 52
  Battle Creek at Hermosa (d) 53
  Spring Creek near Hermosa (d) 54

Rapid Creek:

    Rhoads Fork near Rochford (dr) 55
    Castle Creek above Deerfield Reservoir, near Hill City (dctms) 57
    Deerfield Reservoir near Hill City (e) 63
    Castle Creek below Deerfield Dam (d) 64
  Rapid Creek above Pactola Reservoir, at Silver City (d) 65
  Pactola Reservoir near Silver City (e) 66
  Rapid Creek below Pactola Dam (d) 67
  Rapid Creek above Canyon Lake, near Rapid City (d) 68
    Lime Creek at Mouth, at Rapid City (d) 69
  Rapid Creek above Water Treatment Plant, at Rapid City (d) 70
    Deadwood Avenue Drain at Mouth, at Rapid City (d) 71
  Rapid Creek at Rapid City (d) 72
  Rapid Creek at East Main Street, at Rapid City (d) 73
    Hawthorne Ditch at Rapid City (d) 74
  Rapid Creek below Hawthorne Ditch, at Rapid City (d) 75
  Rapid Creek below Sewage Plant, near Rapid City (d) 76
  Rapid Creek near Farmingdale (d) 77
  Boxelder Creek near Nemo (d) 78
  Boxelder Creek near Rapid City (d) 79
Cheyenne River near Wasta (d) 80
  Elk Creek near Rapid City (d) 81
  Elk Creek near Elm Springs (d) 82
  Keyhole Reservoir near Moorcroft, WY (e) 83
  Belle Fourche River at Wyoming-South Dakota State line (dc) 84

Redwater Creek:

      Cold Springs Creek at Buckhorn, WY (d) 86
      Sand Creek near Ranch A, near Beulah, WY (d) 87
      Murray ditch at Wyoming-South Dakota State line (d) 88
    Redwater Creek at Wyoming-South Dakota State line (d) 89
      Spearfish Creek at Spearfish (d) 90
    Redwater River above Belle Fourche (d) 91
      Hay Creek at Belle Fourche (d) 92
    Inlet Canal near Belle Fourche (dct) 93

Owl Creek:

    Belle Fourche Reservoir near Belle Fourche (e) 97
  Belle Fourche River near Fruitdale (d) 98
    Whitewood Creek at Deadwood (d) 99
    Whitewood Creek near Whitewood (d) 100
    Horse Creek above Vale (d) 101
    Horse Creek near Vale (ct) 102
  Belle Fourche River near Sturgis (dct) 104
  Belle Fourche River near Elm Springs (dcbmts) 109
  Cherry Creek near Plainview (d) 112
Cheyenne River at Cherry Creek (dcbms) 113

MISSOURI RIVER BASIN--Continued

Lake Oahe near Pierre (ce) 117
Missouri River at Pierre (cbms) 119

BAD RIVER BASIN

Bad River near Midland (d) 122
Bad River near Fort Pierre (dts) 123

MEDICINE KNOLL CREEK BASIN

Medicine Knoll Creek near Blunt (d) 127

MEDICINE CREEK BASIN

Medicine Creek at Kennebec (d) 128
Lake Sharpe near Fort Thompson (ce) 129

CROW CREEK BASIN

Crow Creek near Gann Valley (d) 131

WHITE RIVER BASIN

White River near Oglala (d) 132
White River near Kadoka (d) 133
Little White River near Martin (d) 134
Lake Creek below refuge, near Tuthill (d) 135
Little White River near Vetal (d) 136
Little White River above Rosebud (c) 137
Rosebud Creek at Rosebud (d) 138
Little White River near Rosebud (d) 139
Little White River below White River (d) 140
White River near Oacoma (dcbmts) 141
Lake Francis Case at Pickstown (ce) 149
Missouri River at Fort Randall Dam (dcbms) 151
Missouri River at Greenwood (e) 155

NIOBRARA RIVER BASIN

Niobrara River:

Keya Paha River at Wewela (d) 156
Lewis and Clark Lake at Springfield (e) 157
Lewis and Clark Lake near Yankton (ce) 158
Missouri River at Yankton (d) 160

JAMES RIVER BASIN

James River at Columbia (dcbms) 161

Elm River:

Maple River at North Dakota-South Dakota State line (d) 164
Elm River at Westport (d) 165
James River at Ashton (dt) 166
James River near Redfield (d) 168
James River at Huron (dct) 169
Sand Creek near Alpena (d) 173
James River near Forestburg (ds) 174
Firesteel Creek near Mount Vernon (d) 178
Enemy Creek near Mitchell (ds) 179
Pierre Creek near Alexandria (d) 183
Plum Creek near Milltown (ds) 184
Wolf Creek near Clayton (d) 188
Lonetree Creek at Olivet (ds) 190
James River near Scotland (dcbmts) 194
James River near Yankton (ds) 201
Beaver Creek near Yankton (ds) 205
Missouri River near Gayville (es) 209
Missouri River near Maskell, NE (s) 211

VERMILLION RIVER BASIN

East Fork Vermillion River:

Little Vermillion River near Salem (d) 212
West Fork Vermillion River near Parker (d) 213
Vermillion River near Wakonda (d) 214
Missouri River near Ponca, NE (s) 215

BIG SIOUX RIVER BASIN

Big Sioux River near Watertown (d) 223
Willow Creek near Watertown (d) 224
Big Sioux River near Castlewood (d) 225
Stray Horse Creek near Castlewood (d) 226
Hidewood Creek near Estelline (d) 227
Medary Creek near Brookings (d) 228
Big Sioux River near Brookings (d) 230
Flandreau Creek above Flandreau (d) 231
Big Sioux River near Dell Rapids (dct) 232
Skunk Creek at Sioux Falls (d) 236
Big Sioux River at North Cliff Avenue, at Sioux Falls (d) 237
Split Rock Creek at Corson (d) 238
Big Sioux River at Akron, IA (dcbmts) 239
Missouri River at Sioux City, IA (d) 243

INTRODUCTION

Water resources data for the 1982 water year for South Dakota consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. This report contains discharge records for 110 gaging stations; stage and contents for 14 lakes and reservoirs; water quality for 32 gaging stations; and water levels for 8 observation wells. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in South Dakota.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

For water years 1961 through 1970, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report SD-82-1." Water-Data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

COOPERATION

The U.S. Geological Survey and organizations of the State of South Dakota have had cooperative agreements for the systematic collection of surface-water records since 1914, for ground-water levels since 1935, and for water-quality records since 1947. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Department of Water and Natural Resources, W. R. Neufeld, secretary.

East Dakota Conservancy Sub-District, J. L. Siegel, manager-engineer.

Black Hills Conservancy Sub-District, Ed Glassgow, manager-treasurer.

City of Watertown, J. O. Babcock, city engineer.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army; the Bureau of Indian Affairs, U.S. Department of Interior; the Bureau of Reclamation, U.S. Department of Interior; the Fish and Wildlife Service, U.S. Department of Interior; the Environmental Protection Agency; and the Missouri River basin development program for gaging and water-quality stations.

Organizations that supplied data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

by John R. Little

Precipitation during water year 1982 ranged from about 10 inches more than the long-term average in the southwest corner of the State to about 3 inches less than normal in the northeast corner. The data in table 1 are a comparison of the 1982 water year precipitation at five reporting stations compared to the long-term average. The data are from published reports of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA).

Table 1.--Comparison of current water year precipitation with average for January 1929 to December 1980, in inches.

Observation site	1982 water year precipitation	Average precipitation	Departure from average
Faith	23.21	15.42[a]	7.79
Custer	28.21	18.11[b]	10.10
Murdo	25.08	16.87[b]	8.21
Aberdeen	15.54	18.71	-3.17
Sioux Falls	27.19	24.81	2.38

[a] Data not available for 1948-51, 1973, and 1974.
[b] Data not available for 1951.

Surface Water

Streamflow during water year 1982 was about 200 percent of normal west of the Missouri River and about 85 percent of normal east of the Missouri, based on the flow at the five gaging stations shown in figure 1. Effects from regulation are negligible on these streams at the gaging stations. The total drainage area in South Dakota at these gaging stations is about 35,000 square miles which is about 45 percent of the area of the State. Streamflow was less than normal through the fall and winter after a summer of less-than-normal precipitation. Precipitation increased during the winter and the plains streams showed slightly greater-than-normal discharges during the snowmelt runoff period. In May, precipitation was greater than normal at all but one NOAA reporting station in the State, with many of the stations west of the Missouri River reporting more than 300 percent of normal. The Moreau River near Whitehorse gaging station recorded a new record peak discharge of 27,700 cubic feet per second on May 24; this was calculated to have a 29-year return interval.

Castle Creek, a mountain stream, derives most of its flow from the Madison aquifer. The surface of most of the basin is porous limestone which accepts water readily and recharges the aquifer. This results in Castle Creek's small range in discharge and subdued reaction to precipitation as reflected by the hydrograph in figure 1.

Combined storage in the four Missouri River main-stem reservoirs (Lakes Oahe, Sharpe, Francis Case, and Lewis and Clark) was 25,123,000 acre-feet at the end of the water year, an increase of 4,863,000 acre-feet from the same date a year ago.

Water Quality

Chemical quality of surface water in South Dakota varies considerably across the State. Long-term water-quality conditions for five water-quality stations in which mean monthly average dissolved-solids concentrations for the period of record are compared with samples collected monthly during the current water year are shown in figure 2. Dissolved-solids concentrations ranged from as little as 240 mg/L at the Castle Creek station to as much as 2,370 mg/L at the James River station during the 1982 water year. In general, the dissolved-solids concentrations during the 1982 water year were near the long-term average monthly dissolved-solids concentrations for these stations. Exceptions occur when a sample is collected at a time when the discharge is significantly different from normal.

Ground Water

Water levels in wells, discharge of springs and wells, and water-quality data are key characteristics in monitoring ground-water trends; however, these hydrologic characteristics need to be integrated with other observations and ground-water system studies in order to have the fullest meaning and usefulness. In South Dakota, the U.S. Geological Survey regularly monitors a number of observation wells. Other wells, which are known as project wells, are used for specific (generally short-term) studies and, although they are not part of the observation-well program, data obtained from them also are made available. The hydrographs in figure 3 are from eight of the wells in the network.

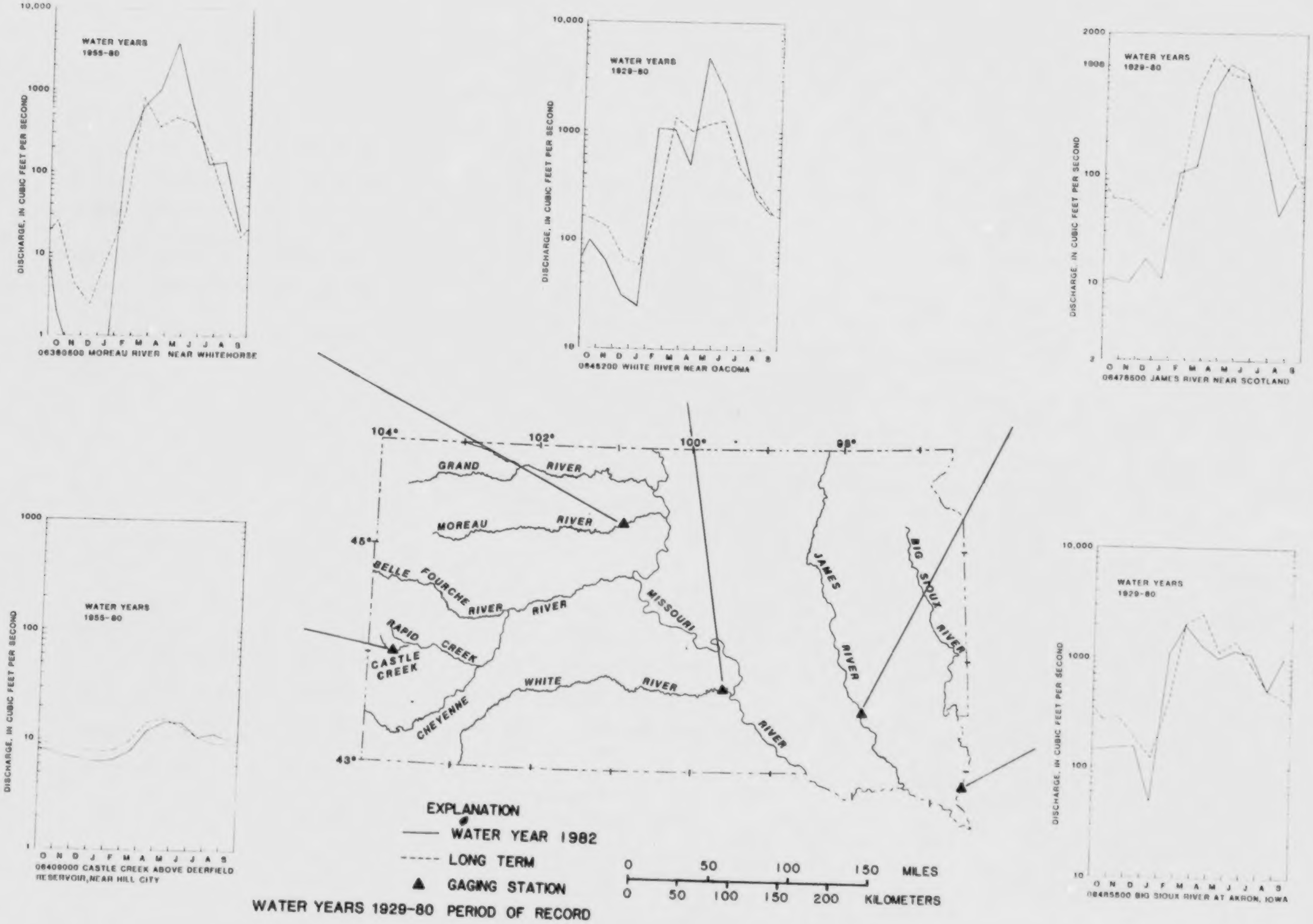
DISCHARGE, IN CUBIC FEET PER SECOND
WATER YEARS 1955-80
06360500 MOREAU RIVER NEAR WHITEHORSE
WATER YEARS 1929-80
06452000 WHITE RIVER NEAR OACOMA
06478500 JAMES RIVER NEAR SCOTLAND
06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY
06485500 BIG SIOUX RIVER AT AKRON, IOWA
O N D J F M A M J J A S
10,000
2000
1000
100
10
2
1
104°
102°
100°
98°
45°
43°
GRAND RIVER
MOREAU RIVER
BELLE FOURCHE RIVER
RIVER
MISSOURI RIVER
RAPID CREEK
CASTLE CREEK
CHEYENNE
WHITE RIVER
JAMES RIVER
BIG SIOUX RIVER
EXPLANATION
WATER YEAR 1982
LONG TERM
GAGING STATION
WATER YEARS 1929-80 PERIOD OF RECORD
0 50 100 150 MILES
0 50 100 150 200 KILOMETERS

Figure 1.--Comparison of 1982 monthly mean to long-term monthly mean discharges.

Table 2.--Comparison of current-year maximum discharge with maximum for long-term periods.

Gaging station number and name		Period used	Peak discharges					
			1982 Water year			Long-term period		
			Peak (ft³/s)	Date	Return interval (years)	Peak (ft³/s)	Date	Return interval (years)
06360500	Moreau River near Whitehorse	1955-80	27,700	5-24-82	29	27,700	5-24-82	29
06409000	Castle Creek above Deerfield Reservoir, near Hill City	1955-80	148	8- 4-82	9	906	6-17-65	>100
06452000	White River near Oacoma	1929-80	20,600	5-22-82	7	51,900	3-30-52	>100
06478500	James River near Scotland	1929-80	2,360	6- 1-82	2	15,000	4- 3-62	91
06485500	Big Sioux River at Akron, Iowa	1929-80	6,500	2-25-82	<2	80,800	4- 9-69	>100

Table 3.--Comparison of current-year minimum daily discharge with minimum for long-term periods.

Gaging station number and name		Period used	Minimum discharges					
			1982 Water year			Long-term period		
			1-day (ft³/s)	Date	Average 7-day (ft³/s)	1-day (ft³/s)	Date	7-day, 10-year return interval (ft³/s)
06360500	Moreau River near Whitehorse	1955-80	0	many days	0	0	many days	not determined
06409000	Castle Creek above Deerfield Reservoir, near Hill City	1955-80	5.0	1-16-82	5.7	2.0	several days	3.8
06452000	White River near Oacoma	1929-80	10	1-10-82	11	0	many days	3.4
06478500	James River near Scotland	1929-80	6.2	10-2,11-81	7.2	0	many days	1.6
06485500	Big Sioux River at Akron, Iowa	1929-80	26	3-22-82	27	4.0	1-17-77	19

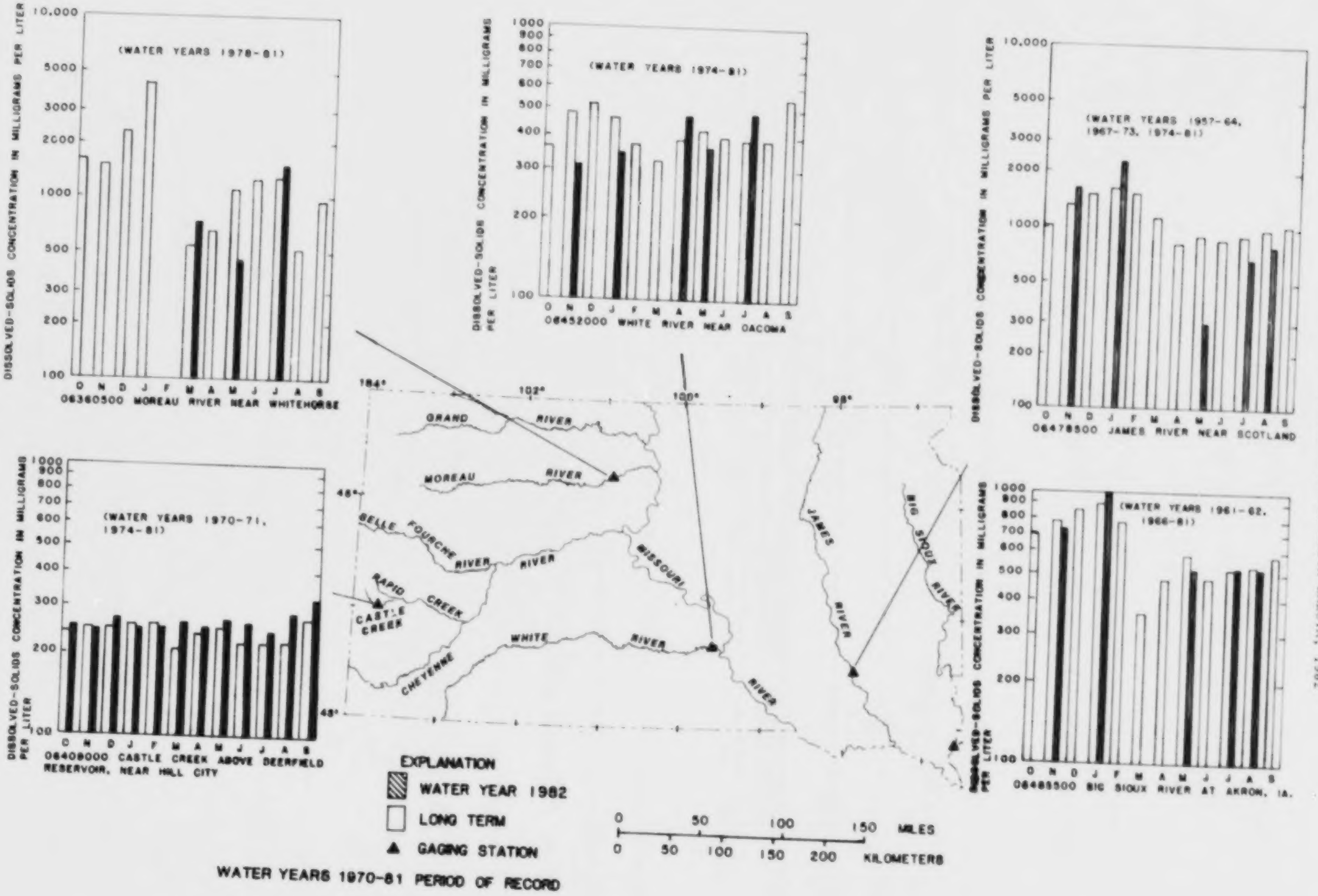

Figure 2.--Comparison of 1982 monthly dissolved-solids concentrations to long-term average monthly dissolved-solids concentrations.

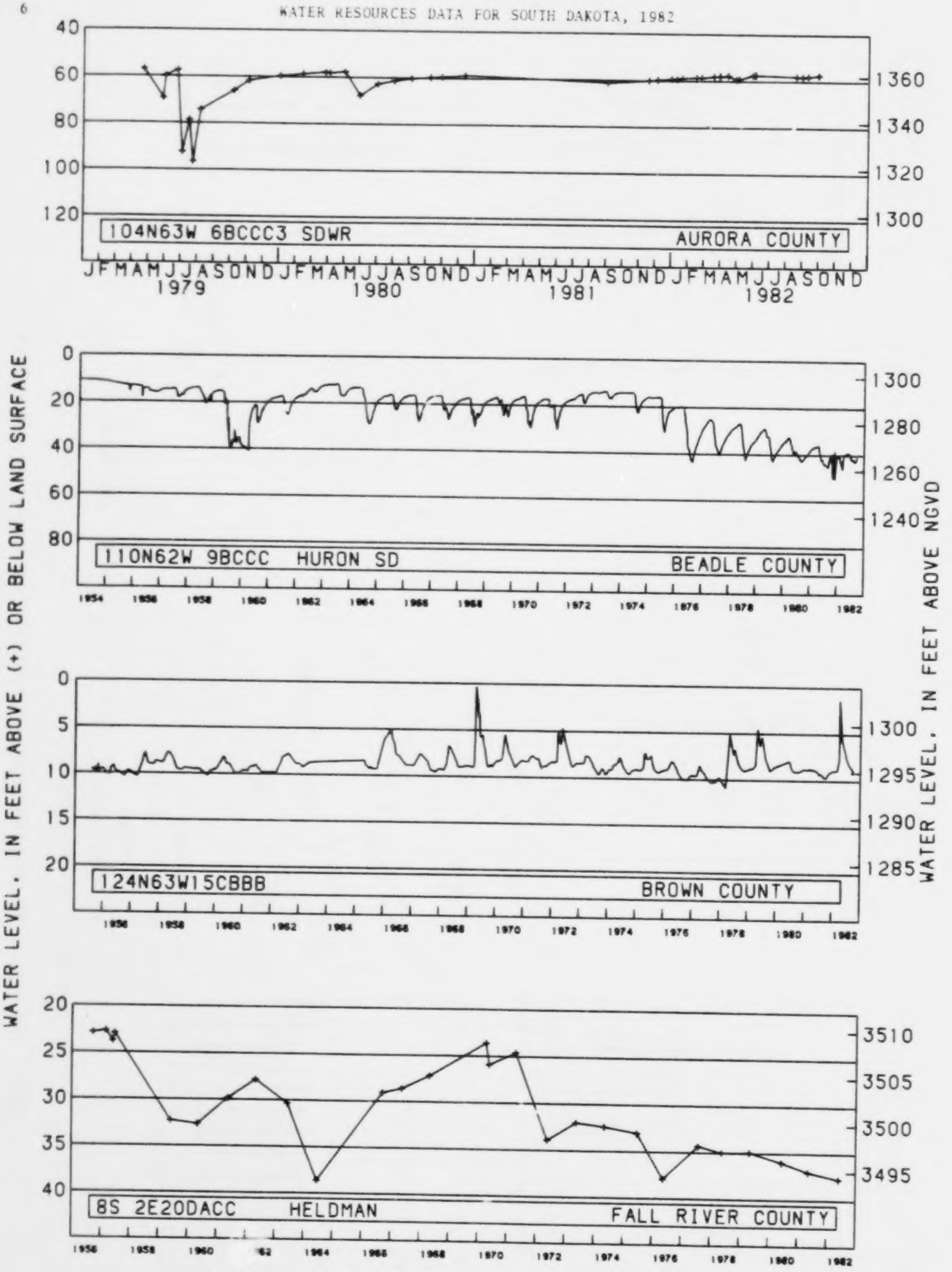

Figure 3.--Water levels from selected observation wells.

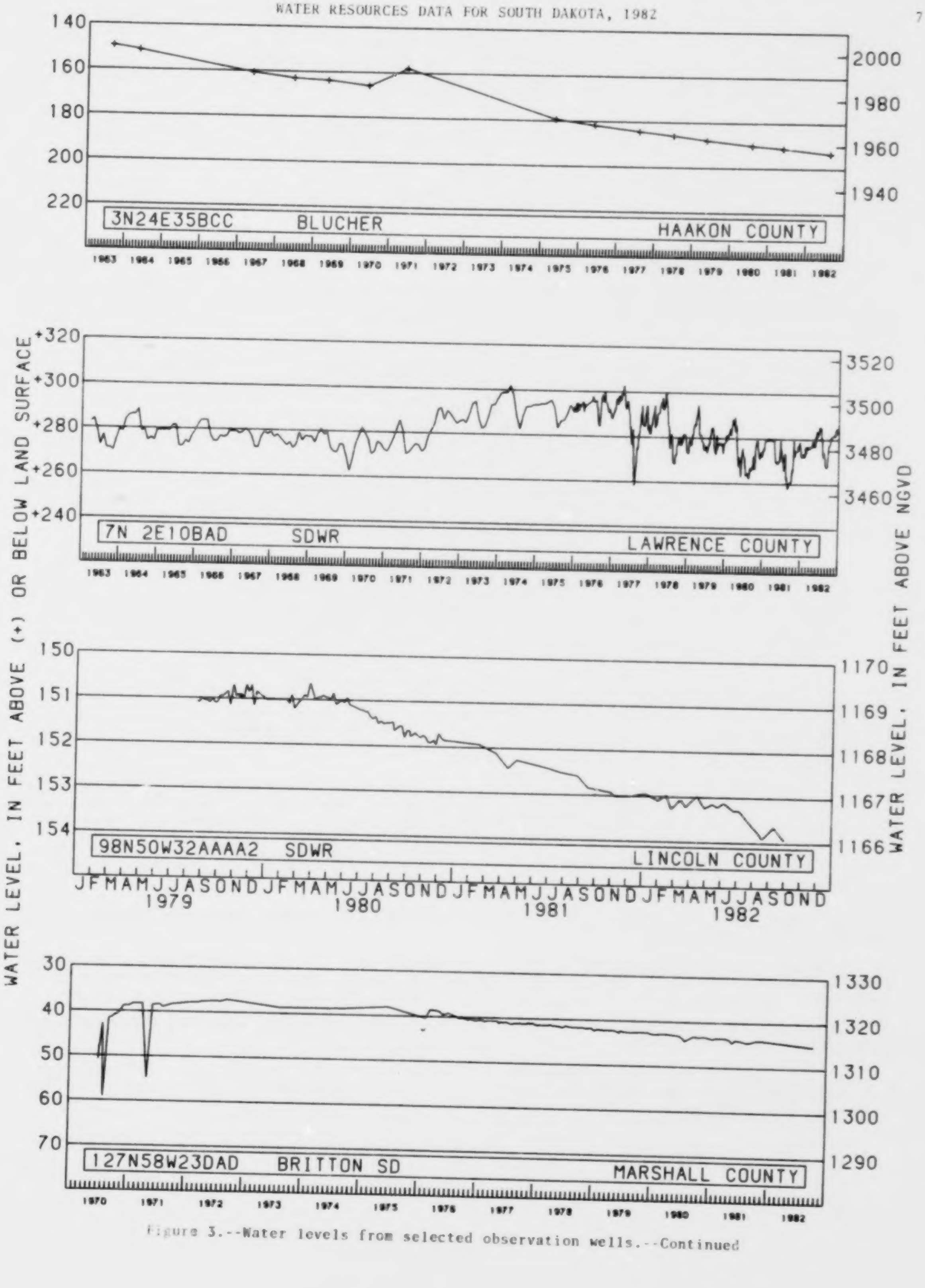

Figure 3.--Water levels from selected observation wells.--Continued

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting English units to International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is the primary energy donor in cellular life process. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

> Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.
>
> Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.
>
> Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

> Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).
>
> Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to the material in a representative water sample which passes through a 0.45 µm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determination of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (µg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter code numbers are unique five-digit code numbers assigned to each parameter placed into storage. These codes are assigned by the Environmental Protection Agency and are also used to identify data exchanged among agencies.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle-size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass or volume.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth (1×10^{12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg $C/(m^2 \cdot time)$ for periphyton and macrophytes and mg $C/(m^3 \cdot time)$ for phytoplankton] are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg $O_2/(m^2 \cdot time)$ for periphyton and macrophytes and mg $O_2/(m^3 \cdot time)$ for phytoplankton] are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge time mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrates refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom..................Animal
Phylum...............Arthropoda
Class...................Insecta
Order.............Ephemeroptera
Family..............Ephemeridae
Genus.................Hexageria
Species.......Hexagenia limbata

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable refers to the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent percent in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Turbidity (NTU) is based on the comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension of Formazin polymer under the same conditions.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 06442500, which appears just to the left of the station name, includes the 2-digit part number "06" plus the 6-digit downstream order number "442500".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 4 below.

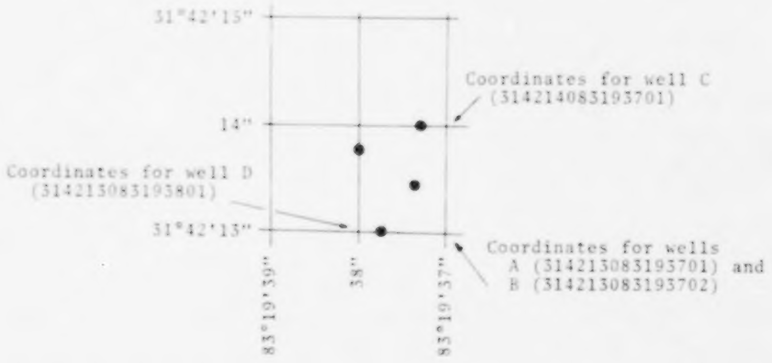

Figure 4. System for numbering wells and miscellaneous sites (latitude and longitude)

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text-books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some northern stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 10.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following EXTREMES, for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, Va. 22092, maintains an index of all discharge measurement sites in the State. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small daily temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of a 15-digit number that is based on latitude and longitude. See Figure 4.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either National Geodetic Vertical Datum of 1929 or land-surface datum (lsd). National Geodetic Vertical Datum of 1929 is explained in the Definition of Terms paragraph. Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above National Geodetic Vertical Datum of 1929 is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
3-A9. *Measurement of time of travel and dispersion in streams by dye tracing*, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages
8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

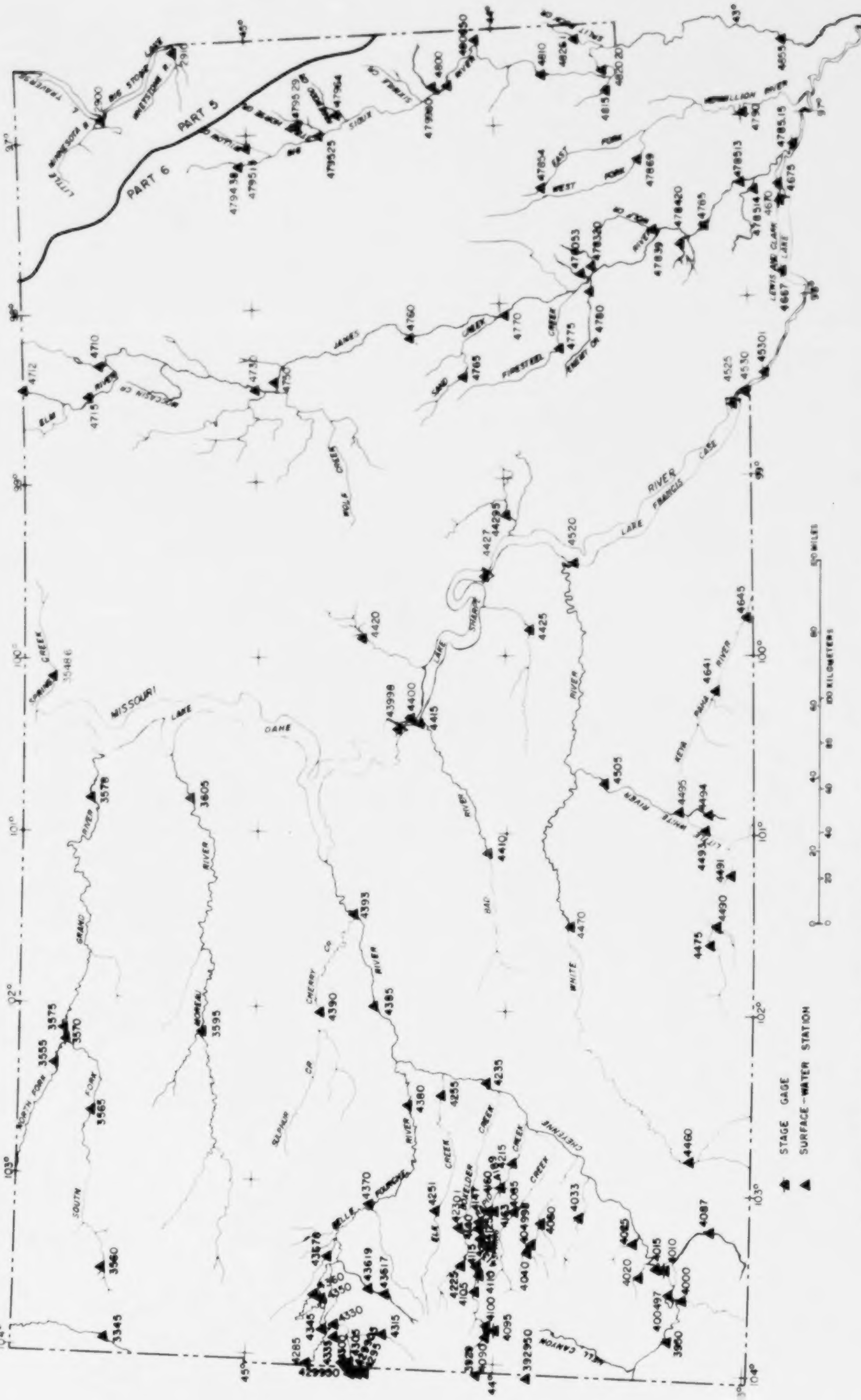
PART 5
PART 6
MISSOURI
LAKE
OAHE
GRAND
RIVER
SOUTH FORK
NORTH FORK
MOREAU
CHEYENNE
BELLE FOURCHE
BAD
WHITE
KEYA PAHA
JAMES
SIOUX
VERMILLION RIVER
LAKE FRANCIS CASE
LEWIS AND CLARK LAKE
LAKE SHARPE
ELM
STAGE GAGE
SURFACE-WATER STATION
0 20 40 60 80 100 MILES
0 20 40 60 80 100 KILOMETERS

Figure 5. --Map of South Dakota showing location of lake and stream gaging stations

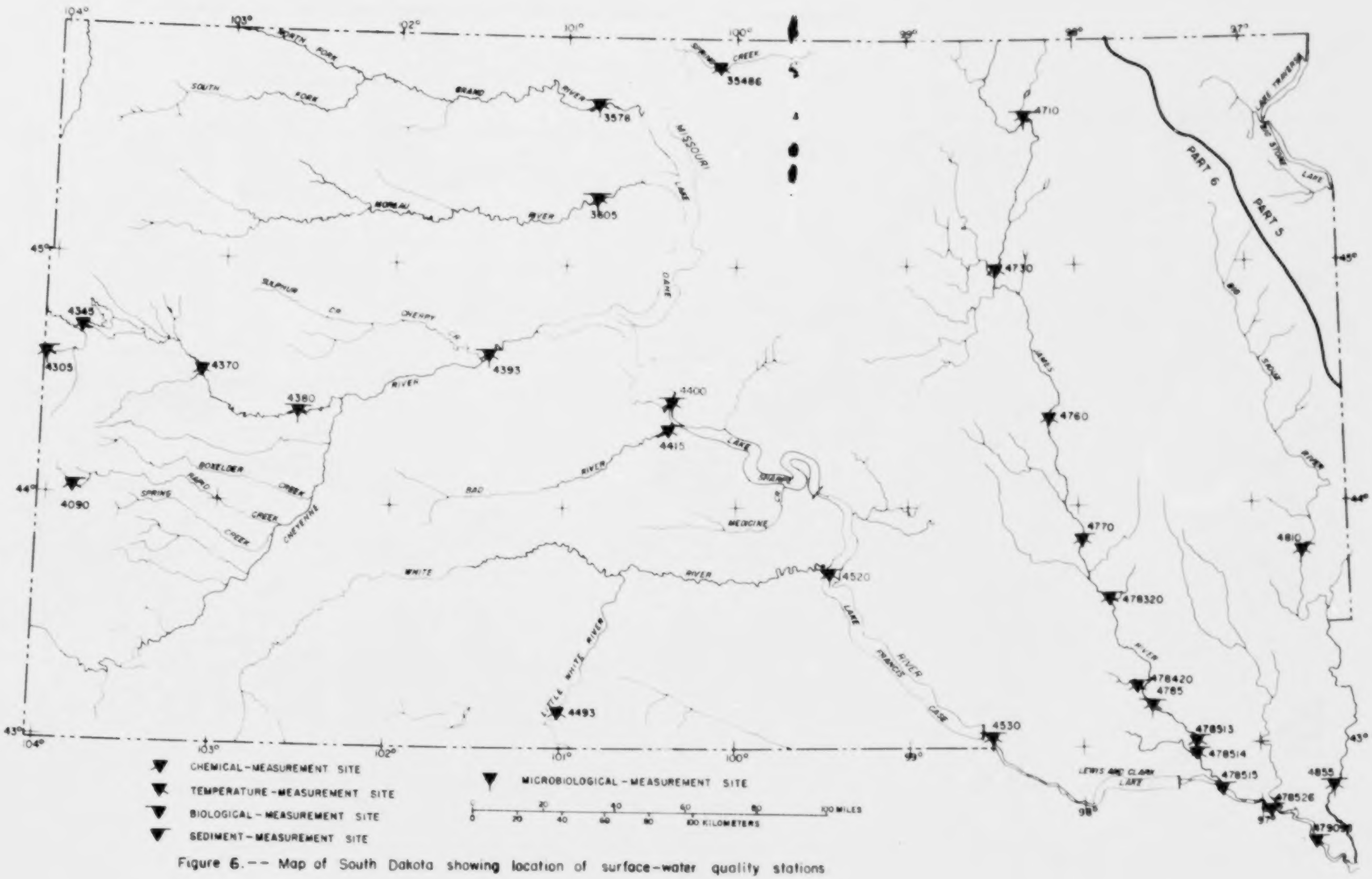
104°
103°
102°
101°
100°
99°
98°
97°
45°
44°
43°
NORTH FORK
SOUTH FORK
GRAND RIVER
MOREAU RIVER
SULPHUR CR
CHERRY CR
CHEYENNE RIVER
BOXELDER CREEK
RAPID CREEK
SPRING CREEK
BAD RIVER
WHITE RIVER
LITTLE WHITE RIVER
MEDICINE
SPRING CREEK
MISSOURI
LAKE OAHE
LAKE SHARPE
LAKE FRANCIS CASE
RIVER
LEWIS AND CLARK LAKE
JAMES RIVER
BIG SIOUX RIVER
LAKE TRAVERSE
BIG STONE LAKE
PART 6
PART 5
35486
3578
3605
4305
4345
4370
4380
4393
4090
4400
4415
4493
4520
4530
4710
4730
4760
4770
478320
478420
4785
478513
478514
478515
478526
4790
4810
4855
CHEMICAL-MEASUREMENT SITE
TEMPERATURE-MEASUREMENT SITE
BIOLOGICAL-MEASUREMENT SITE
SEDIMENT-MEASUREMENT SITE
MICROBIOLOGICAL-MEASUREMENT SITE
0
20
40
60
80
100 MILES
0
20
40
60
80
100 KILOMETERS

Figure 6.-- Map of South Dakota showing location of surface-water quality stations

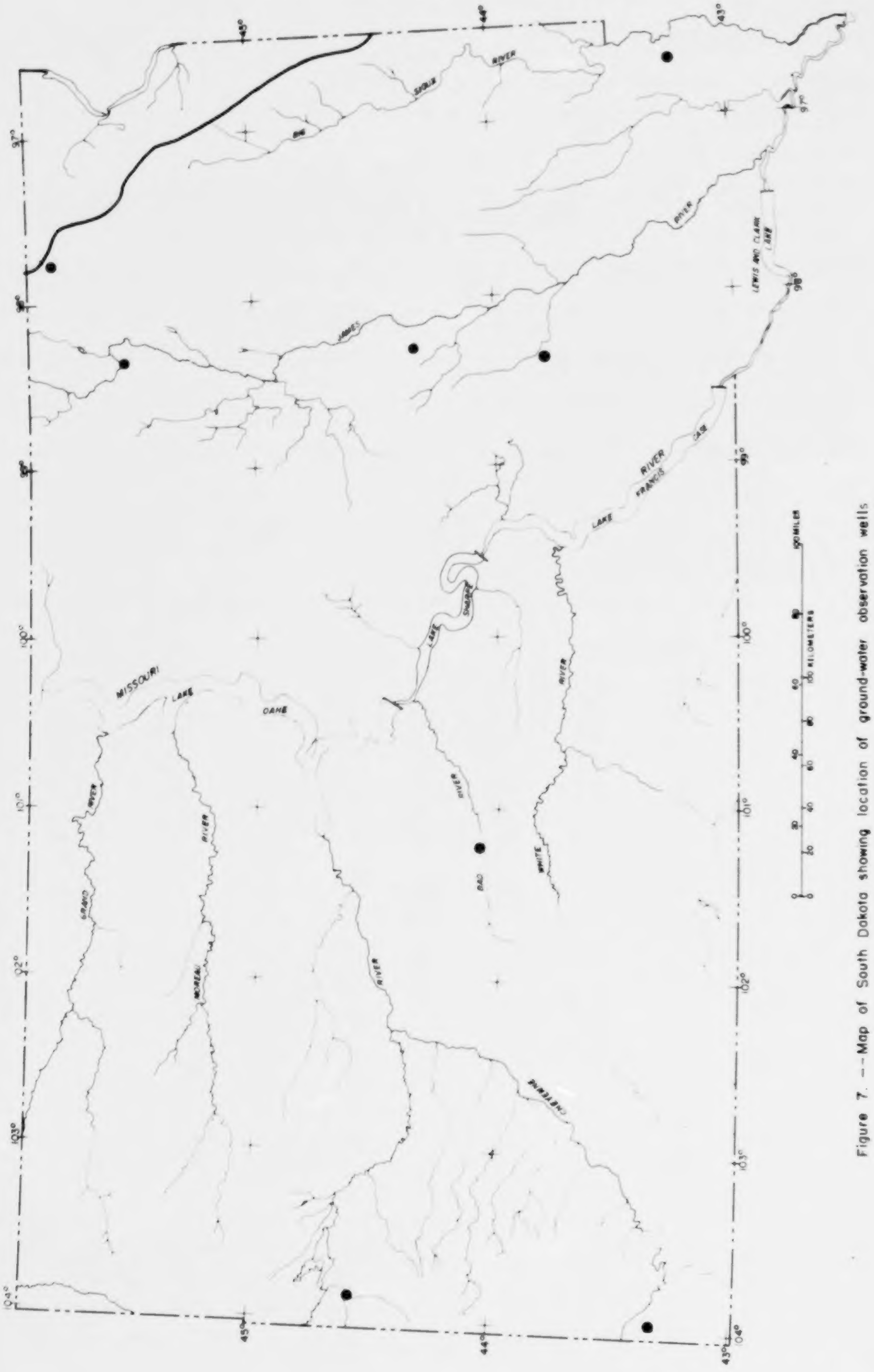
MISSOURI
LAKE OAHE
GRAND RIVER
MOREAU RIVER
CHEYENNE RIVER
BAD RIVER
WHITE RIVER
LAKE SHARPE
LAKE FRANCIS CASE RIVER
LEWIS AND CLARK LAKE
JAMES RIVER
BIG SIOUX RIVER
45°
44°
43°
97°
98°
99°
100°
101°
102°
103°
104°
0 20 40 60 80 100 MILES
0 20 40 60 80 100 KILOMETERS

Figure 7. --Map of South Dakota showing location of ground-water observation wells

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD

LOCATION.--Lat 45°32'49", long 103°58'23", in SW¼ sec.2, T.18 N., R.1 E., Harding County, Hydrologic Unit 10110201, on left bank 15 ft (5 m) upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi² (5,100 km²), approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1904. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,108.98 ft (947.617 m) National Geodetic Vertical Datum of 1929. Sept. 2, 1903, to Nov. 30, 1906, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft (5 m) downstream, and Oct. 9, 1957, to Sept. 30, 1976, water-stage recorder at present site both at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter period, which are poor. Small diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 136 ft³/s (3.851 m³/s), 98,530 acre-ft/yr (121 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft³/s (267 m³/s) Mar. 24, 1978, gage height, 16.90 ft (5.151 m), present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1952 reached a stage of about 18 ft (5.5 m), present datum, from local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 17	1115	4460	126	13.16	4.011	May 30	1530	1210	34.3	7.57	2.307
May 21	2100	*6810	193	*15.85	4.831	June 7	2345	1700	48.1	8.78	2.676

Minimum daily discharge, 1.2 ft³/s (0.034 m³/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.6	2.9	2.1	2.6	7.4	246	5.9	852	73	90	67
2	1.4	2.6	2.9	2.0	2.5	7.6	106	5.4	618	71	70	60
3	1.3	2.6	3.1	2.0	2.2	8.0	59	4.7	631	63	59	75
4	1.2	2.6	2.9	1.8	1.8	8.2	77	6.3	356	58	47	76
5	1.3	2.6	2.9	1.8	1.5	7.2	69	7.7	250	53	36	57
6	1.6	2.6	2.9	1.7	1.6	7.6	55	6.8	410	48	32	50
7	2.2	2.3	3.2	1.8	1.8	8.2	26	5.4	1400	45	60	44
8	2.1	2.4	3.3	2.1	1.8	8.6	26	5.0	1400	42	34	39
9	2.0	2.6	3.6	1.9	1.9	8.8	36	5.0	954	41	25	34
10	2.0	2.6	3.8	1.6	1.7	9.2	22	6.3	848	41	29	31
11	2.1	2.6	3.8	1.7	1.8	11	31	6.3	578	36	22	26
12	2.3	2.6	3.6	1.9	2.0	12	31	6.3	343	31	17	22
13	2.3	2.6	3.5	2.0	2.3	13	35	6.3	248	32	14	19
14	2.3	2.6	3.5	2.2	2.7	15	30	12	200	32	11	18
15	2.3	2.6	3.5	2.0	3.4	16	23	161	196	30	11	20
16	2.3	2.6	3.5	1.8	3.9	16	33	1860	176	31	9.3	16
17	1.9	2.6	3.5	2.0	4.8	16	30	4020	161	39	9.6	14
18	2.1	2.6	3.5	2.2	5.5	17	24	2710	178	35	13	41
19	2.0	2.6	3.4	2.3	6.2	17	20	1360	371	31	20	61
20	2.2	2.6	3.3	2.2	6.8	18	16	1740	624	28	475	66
21	2.8	2.7	3.2	2.3	7.2	18	17	5570	250	26	189	59
22	6.2	3.2	3.2	2.1	7.0	19	15	5340	177	23	368	48
23	4.9	3.2	3.1	1.9	6.6	19	12	3950	144	18	656	39
24	4.7	3.2	3.0	1.8	6.2	20	10	2580	127	20	533	32
25	4.7	3.4	3.0	2.0	5.6	22	11	2130	112	63	266	26
26	4.7	3.5	2.9	2.2	6.0	23	11	1540	116	53	523	22
27	4.2	3.2	2.7	2.4	6.4	26	9.6	719	144	58	163	20
28	3.8	2.9	2.6	2.6	7.0	31	8.1	447	113	225	120	21
29	3.4	3.0	2.5	2.7	---	229	7.2	631	94	182	104	18
30	2.9	2.9	2.3	2.8	---	239	7.2	1110	86	188	86	36
31	2.6	---	2.2	2.7	---	302	---	890	---	134	74	---
TOTAL	83.3	82.7	97.3	64.6	110.8	1179.8	1103.1	36847.4	12159	1850	4165.9	1157
MEAN	2.69	2.76	3.14	2.08	3.96	38.1	36.8	1189	405	59.7	134	38.6
MAX	6.2	3.5	3.8	2.8	7.2	302	246	5570	1400	225	656	76
MIN	1.2	2.3	2.2	1.6	1.5	7.2	7.2	4.7	86	18	9.3	14
AC-FT	165	164	193	128	220	2340	2190	73090	24120	3670	8260	2290

CAL YR 1981 TOTAL 7756.32 MEAN 21.3 MAX 614 MIN .00 AC-FT 15380
WTR YR 1982 TOTAL 58900.90 MEAN 161 MAX 5570 MIN 1.2 AC-FT 116800

06354860 SPRING CREEK NEAR HERREID, SD

LOCATION.--Lat 45°58'52", long 100°06'28", in SW¼ sec.13, T.127 N., R.77 W., Campbell County, Hydrologic Unit 10130102, on left bank 0.5 mi (0.8 km) upstream from county highway bridge, 2.4 mi (3.9 km) southwest of Herreid and 13.2 mi (21.2 km) upstream from high-water line of Lake Oahe.

DRAINAGE AREA.--440 mi² (1,140 km²), approximately, of which about 220 mi² (570 km²) is probabably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,653.80 ft (504.078 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--20 years, 9.09 ft³/s (0.257 m³/s) 6,590 acre-ft/yr (8.13 hm³/yr); median of yearly mean discharges, 4.2 ft³/s (0.12 m³/s), 3,000 acre-ft/yr (3.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft³/s (37.9 m³/s) Mar. 29, 1978, gage height, 11.49 ft (3.502 m); maximum gage height, 11.60 ft (3.536 m) Mar. 17, 1966; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 40 ft³/s (1.13 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 17	--	60	1.70	ice jam	
Apr. 1	1415	*1080	30.6	*11.05	3.368

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.06	.00	18	1050	6.1	1.6	.00	.00	.00
2	.00	.00	.00	.06	.00	17	777	5.4	1.5	.00	.00	.00
3	.00	.00	.00	.05	.00	15	315	5.0	1.3	.00	.00	.00
4	.00	.00	.00	.05	.00	12	174	4.1	1.1	.00	.00	.00
5	.00	.00	.00	.04	.00	10	155	2.2	.94	.00	.00	.00
6	.00	.00	.00	.03	.00	7.0	126	2.7	.81	.00	.00	.00
7	.00	.00	.02	.03	.00	7.0	96	2.8	.90	.00	.00	.00
8	.00	.00	.05	.02	.00	7.4	79	2.6	1.3	.00	.00	.00
9	.00	.00	.10	.01	.00	7.6	66	2.5	1.5	.00	.00	.00
10	.00	.00	.12	.00	.00	8.0	63	3.2	1.2	.00	.00	.00
11	.00	.00	.10	.00	.00	10	75	2.6	1.0	.00	.00	.00
12	.00	.00	.08	.00	.02	12	79	2.7	.78	.00	.00	.00
13	.00	.00	.06	.00	.05	20	65	2.7	.62	.00	.00	.00
14	.00	.00	.04	.00	.20	30	90	3.3	.45	.00	.00	.00
15	.00	.00	.03	.00	.30	40	76	3.4	.42	.00	.00	.00
16	.00	.00	.03	.00	1.0	50	66	3.5	.36	.00	.00	.00
17	.00	.00	.03	.00	5.0	55	54	3.7	.34	.00	.00	.00
18	.00	.00	.04	.00	15	50	43	4.4	.30	.00	.00	.00
19	.00	.00	.07	.00	24	25	39	4.1	.26	.00	.00	.00
20	.00	.00	.10	.00	25	20	33	3.4	.19	.00	.00	.00
21	.00	.00	.10	.00	24	18	27	2.8	.07	.00	.00	.00
22	.00	.00	.09	.00	20	16	24	2.7	.02	.00	.00	.00
23	.00	.00	.09	.00	17	15	20	5.0	.00	.00	.00	.00
24	.00	.00	.09	.00	16	16	17	3.9	.00	.00	.00	.00
25	.00	.00	.09	.00	18	18	14	3.7	.00	.00	.00	.00
26	.00	.00	.08	.00	20	20	11	3.6	.00	.00	.00	.00
27	.00	.00	.08	.00	19	25	9.4	3.2	.00	.00	.00	.00
28	.00	.00	.07	.00	18	30	8.0	3.0	.00	.00	.00	.00
29	.00	.00	.07	.00	---	57	6.9	2.5	.00	.00	.00	.00
30	.00	.00	.07	.00	---	324	7.1	2.1	.00	.00	.00	.00
31	.00	---	.06	.00	---	843	---	1.8	---	.00	.00	---
TOTAL	.00	.00	1.76	.35	222.57	1803.0	3679.4	104.7	16.96	.00	.00	.00
MEAN	.000	.000	.057	.011	7.95	58.2	123	3.38	.57	.000	.000	.000
MAX	.00	.00	.12	.06	25	843	1050	6.1	1.6	.00	.00	.00
MIN	.00	.00	.00	.00	.00	7.0	6.9	1.8	.00	.00	.00	.00
AC-FT	.00	.00	3.5	.7	441	3580	7300	208	34	.00	.00	.00

CAL YR 1981 TOTAL 754.60 MEAN 2.07 MAX 227 MIN .00 AC-FT 1500
WTR YR 1982 TOTAL 5828.74 MEAN 16.0 MAX 1050 MIN .00 AC-FT 11560

06354860 SPRING CREEK NEAR HERREID, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 1978, October 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
MAR									
02...	1430	17	293	7.3	.5	109	0	27	10
29...	1710	57	175	7.9	.5	63	0	15	6.2
APR									
28...	1415	9.1	540	7.4	13.0	186	16	48	16
MAY									
25...	1125	3.7	656	7.7	20.0	226	0	56	21

DATE	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
MAR									
02...	19	24	.8	19	110	13	7.5	.1	13
29...	12	24	.7	14	75	7.0	3.8	.1	10
APR									
28...	57	38	1.9	11	170	90	7.2	.1	13
MAY									
25...	53	32	1.6	14	241	100	9.5	.1	9.8

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
MAR								
02...	180	.24	8.3	1.1	.760	.620	.510	1.6
29...	116	.16	17.9	.60	.540	.430	.370	1.1
APR								
28...	345	.47	8.5	<.10	.160	.120	.110	.34
MAY								
25...	408	.55	4.1	<.10	.270	.210	.080	.25

< Less than.

06355500 NORTH FORK GRAND RIVER NEAR WHITE BUTTE, SD

LOCATION.--Lat 45°47'39", long 102°21'59", in NE¼SE¼ sec.10, T.21 N., R.14 E., Perkins County, Hydrologic Unit 10130301, on right bank 1,400 ft (430 m) upstream from highway bridge and 9.8 mi (15.8 km) south of White Butte.

DRAINAGE AREA.--1,190 mi² (3,080 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1947, 1950.

GAGE.--Water-stage recorder. Altitude of gage is 2,275 ft (693 m), by barometer. See WSP 1917 for history of changes prior to June 12, 1951. June 12, 1951, to Aug. 20, 1975, water-stage recorder, and Aug. 21 to Sept. 10, 1975, nonrecording gage at site 1,300 ft (400 m) downstream; Sept. 11, 1975, to Mar. 22, 1976, nonrecording gage at present site, and Mar. 23 to July 28, 1976, nonrecording gage at site 1,400 ft (430 m) downstream, all at present datum.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Bowman-Haley Reservoir, capacity, 93,000 acre-ft (115 hm³), 71 mi (114 km) upstream, beginning August 1966. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 55.9 ft³/s (1.583 m³/s), 40,500 acre-ft/yr (49.9 hm³/yr); median of yearly mean discharges, 33 ft³/s (0.93 m³/s), 23,900 acre-ft/yr (29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,900 ft³/s (875 m³/s) Apr. 16, 1950, gage height, 20.0 ft (6.10 m), from floodmarks, from rating curve extended above 19,000 ft³/s (538 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,850 ft³/s (52.4 m³/s) at 1945 hours, May 21, gage height, 7.23 ft (2.204 m); maximum gage height, 8.63 ft (2.630 m) Feb. 20 (backwater from ice); no flow Oct. 1-3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.1	1.7	1.7	1.0	80	900	79	377	93	150	12
2	.00	1.2	1.8	1.7	.90	77	1000	73	352	88	130	11
3	.00	1.1	1.9	1.6	.80	72	950	68	304	70	110	12
4	.01	1.1	1.9	1.6	.80	68	800	63	264	60	100	11
5	.02	1.2	2.0	1.6	.80	65	500	57	233	50	90	10
6	.02	1.2	2.2	1.6	.85	60	400	53	212	45	81	9.0
7	.06	1.3	2.2	1.6	.85	60	300	49	190	40	78	8.0
8	.08	1.2	2.1	1.6	.90	62	230	48	183	42	167	9.0
9	.10	1.2	2.1	1.5	.95	65	190	44	281	35	157	10
10	.12	1.1	2.0	1.3	1.0	70	160	45	421	35	100	10
11	.14	1.1	2.1	1.3	1.2	80	150	42	395	30	72	10
12	.20	1.0	2.1	1.4	1.5	100	150	41	375	28	57	10
13	.23	1.1	2.0	1.4	1.6	150	160	42	323	25	49	11
14	.26	1.2	2.0	1.5	1.6	250	200	54	279	22	44	9.0
15	.29	1.4	1.9	1.5	1.7	300	300	76	244	20	39	8.0
16	.32	1.6	1.8	1.4	1.8	280	380	173	222	18	35	7.5
17	.42	1.7	1.8	1.3	5.0	230	400	696	203	20	36	7.2
18	.42	2.0	1.7	1.3	40	210	350	1080	191	25	34	7.0
19	.46	1.8	1.7	1.2	80	220	270	948	188	22	31	6.5
20	.50	1.9	1.8	1.1	100	240	230	853	194	17	30	6.4
21	.59	2.0	2.0	1.0	95	250	210	1540	196	13	27	6.2
22	.64	2.0	2.0	1.0	80	240	189	1450	185	11	25	6.0
23	.69	2.1	1.9	1.1	50	200	173	1160	175	10	23	5.8
24	.79	2.1	1.9	1.2	45	170	160	940	164	13	25	5.6
25	.84	2.0	1.9	1.3	45	140	143	744	151	22	23	5.6
26	.84	1.9	1.9	1.4	50	120	130	603	139	57	24	6.0
27	.90	1.9	1.8	1.4	60	110	114	485	124	130	20	9.0
28	.96	1.8	1.8	1.3	70	100	101	408	114	170	17	12
29	.96	1.8	1.7	1.3	---	95	94	349	106	190	15	11
30	.96	1.7	1.7	1.2	---	100	87	291	100	200	14	12
31	.96	---	1.7	1.2	---	400	---	282	---	190	13	---
TOTAL	12.78	45.8	59.1	42.6	738.25	4664	9421	12836	6885	1791	1816	263.8
MEAN	.41	1.53	1.91	1.37	26.4	150	314	414	230	57.8	58.6	8.79
MAX	.96	2.1	2.2	1.7	100	400	1000	1540	421	200	167	12
MIN	.00	1.0	1.7	1.0	.80	60	87	41	100	10	13	5.6
AC-FT	25	91	117	84	1460	9250	18690	25460	13660	3550	3600	523

CAL YR 1981 TOTAL 913.45 MEAN 2.50 MAX 130 MIN .00 AC-FT 1810
WTR YR 1982 TOTAL 38575.33 MEAN 106 MAX 1540 MIN .00 AC-FT 76510

06356000 SOUTH FORK GRAND RIVER AT BUFFALO, SD

LOCATION.--Lat 45°34'34", long 103°32'38", in SW¼ sec.29, T.19 N., R.5 E., Harding County, Hydrologic Unit 10130302, on right bank at downstream side of bridge on U.S. Highway 85, 0.3 mi (0.5 km) south of Buffalo.

DRAINAGE AREA.--148 mi^2 (383 km^2).

PERIOD OF RECORD.--August 1955 to current year.

REVISED RECORDS.--WSP 1917: 1956-57. WRD SD-76-1: 1974(M), 1975.

GAGE.--Water-stage recorder. Datum of gage is 2,839.60 ft (865.510 m) National Geodetic Vertical Datum of 1929. Prior to May 5, 1970, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years, 8.54 ft^3/s (0.242 m^3/s), 6,190 acre-ft/yr (7.63 hm^3/yr); median of yearly mean discharges, 6.9 ft^3/s (0.20 m^3/s), 5,000 acre-ft/yr (6.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,780 ft^3/s (78.7 m^3/s) June 14, 1963, gage height, 9.01 ft (2.746 m), from rating curve extended above 550 ft^3/s (15.6 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in 1956-58, 1960, 1962, 1965, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 15.4 ft (4.69 m), from information by South Dakota Department of Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 16	0615	925	26.2	7.25	2.210	June 7	0545	263	7.45	5.60	1.707
May 20	1830	*970	27.5	*7.32	2.231	June 18	1030	251	7.11	5.58	1.701
May 29	0200	690	19.5	6.87	2.094						

Minimum daily discharge, 0.50 ft^3/s (0.014 m^3/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.8	2.6	1.2	.80	13	57	4.0	8.2	2.6	1.2	1.9
2	1.4	1.8	2.5	1.1	.77	12	40	3.8	6.4	2.5	1.3	1.8
3	1.4	1.8	2.5	1.0	.74	12	25	3.8	5.5	2.4	1.2	1.8
4	1.5	1.8	2.8	.90	.70	11	15	4.0	5.5	2.3	1.9	1.9
5	1.5	1.8	2.6	.90	.70	10	17	4.4	5.2	2.3	1.9	1.9
6	1.6	1.8	3.5	.80	.70	11	17	4.4	85	2.1	1.9	1.9
7	1.6	1.9	3.5	.75	.70	13	14	4.0	137	2.1	2.0	1.8
8	1.6	1.9	2.7	.70	.75	15	12	4.0	27	2.1	1.9	1.8
9	1.6	1.9	2.9	.60	.75	17	11	4.1	13	2.0	2.1	1.8
10	1.6	1.9	2.7	.50	1.0	20	11	14	10	2.0	2.1	1.8
11	1.6	1.9	2.6	.55	2.0	25	12	7.5	7.0	2.0	2.1	1.7
12	1.7	1.9	2.8	.60	3.0	21	14	5.9	5.5	2.6	2.0	1.8
13	1.6	2.0	2.7	.65	5.0	16	12	4.9	4.9	2.1	1.8	1.9
14	1.7	2.0	2.6	.70	7.0	12	9.0	137	5.1	1.8	1.8	3.5
15	1.7	2.0	2.3	.65	8.0	11	7.4	563	32	2.0	1.8	3.3
16	1.7	1.9	2.3	.65	9.0	11	6.1	572	40	2.5	1.8	3.3
17	1.7	2.0	2.1	.70	10	12	5.7	88	55	1.9	1.7	3.0
18	1.7	2.1	1.9	.75	11	11	5.7	18	130	1.8	1.8	2.5
19	1.7	2.2	2.0	.75	13	10	6.2	9.8	25	1.9	6.0	2.3
20	1.7	2.1	2.1	.70	15	9.0	15	426	7.1	1.6	2.9	2.1
21	1.8	2.4	2.2	.70	14	11	25	261	5.0	1.7	2.1	2.1
22	1.8	2.3	2.3	.70	13	10	12	34	4.0	1.6	2.0	2.2
23	2.0	2.3	2.3	.75	11	13	7.7	15	3.5	1.5	2.1	2.1
24	2.0	2.3	2.2	.85	10	18	6.2	11	3.2	1.8	2.0	2.3
25	1.9	2.3	2.1	1.0	10	16	4.9	9.0	4.0	19	1.9	2.5
26	1.9	2.5	1.9	1.1	11	17	5.1	6.9	3.8	25	1.7	2.3
27	1.9	2.6	1.9	1.0	13	16	5.1	6.3	3.5	4.2	1.7	3.4
28	2.0	2.3	1.7	.95	13	21	4.4	117	2.7	4.1	1.9	5.5
29	1.8	2.3	1.4	.90	---	28	4.6	265	2.8	2.4	1.9	4.1
30	1.8	2.3	1.2	.85	---	25	4.1	27	2.7	1.6	1.8	4.3
31	1.8	---	1.2	.85	---	35	---	12	---	1.4	1.9	---
TOTAL	52.8	62.1	72.1	24.80	185.61	482.0	391.2	2646.8	649.6	106.9	62.2	74.6
MEAN	1.70	2.07	2.33	.80	6.63	15.5	13.0	85.4	21.7	3.45	2.01	2.49
MAX	2.0	2.6	3.5	1.2	15	35	57	572	137	25	6.0	5.5
MIN	1.4	1.8	1.2	.50	.70	9.0	4.1	3.8	2.7	1.4	1.2	1.7
AC-FT	105	123	143	49	368	956	776	5250	1290	212	123	148

CAL YR 1981 TOTAL 1820.69 MEAN 4.99 MAX 194 MIN .63 AC-FT 3610
WTR YR 1982 TOTAL 4810.71 MEAN 13.2 MAX 572 MIN .50 AC-FT 9540

06356500 SOUTH FORK GRAND RIVER NEAR CASH, SD

LOCATION.--Lat 45°38'56", long 102°38'27", in SW¼SW¼ sec.34, T.20 N., R.12 E., Perkins County, Hydrologic Unit 10130302, on left bank at downstream side of highway bridge, 1.0 mi (1.6 km) upstream from Little Nasty Creek, 4.0 mi (6.4 km) north of Cash, 10 mi (16 km) south of Lodgepole, 12 mi (19 km) northwest of Bison, and 16 mi (26 km) downstream from Big Nasty Creek.

DRAINAGE AREA.--1,350 mi² (3,500 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,416 ft (736 m), by barometer. Prior to Oct. 25, 1946, nonrecording gage, and Oct. 25, 1946, to May 16, 1966, water-stage recorder, at site 500 ft (152 m) upstream. May 17, 1966, to May 2, 1968, nonrecording gage, at present site, all at same datum.

REMARKS.--Records good except those for winter period and those for October and November, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 54.6 ft³/s (1.546 m³/s), 39,560 acre-ft/yr (48.8 hm³/yr); median of yearly mean discharges, 36 ft³/s (1.02 m³/s), 26,100 acre-ft/yr (32 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft³/s (765 m³/s) Apr. 15, 1950, gage height, 15.40 ft (4.694 m), from rating curve extended above 14,000 ft³/s (396 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 26	0730	ice jam		*6.50	1.981	May 21	1815	*2300	65.1	6.27	1.911
Mar. 12	--	910	25.8	ice jam		May 30	1315	861	24.4	4.13	1.259
Mar. 30	2400	962	27.2	4.20	1.280	June 8	1345	519	14.7	3.41	1.039
May 16	2030	2290	64.9	6.25	1.905						

Minimum daily discharge, 1.0 ft³/s (0.03 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	7.0	4.6	2.1	2.0	38	396	20	282	12	71	8.2
2	9.0	7.5	4.7	2.0	1.7	35	279	19	163	11	53	7.4
3	9.0	7.5	4.8	1.8	1.7	35	194	16	109	12	34	6.9
4	9.5	8.0	4.8	1.7	1.6	33	114	16	82	11	23	6.5
5	9.5	8.0	5.0	1.5	1.5	30	109	14	68	9.3	17	6.4
6	10	7.5	5.0	1.4	1.5	32	133	14	62	9.4	14	7.2
7	10	7.0	4.8	1.3	1.5	35	136	13	75	9.2	13	6.7
8	10	6.5	4.8	1.3	1.5	40	103	13	412	9.6	10	6.3
9	9.5	6.0	4.5	1.1	1.6	50	105	13	340	8.7	8.6	6.4
10	9.5	6.0	4.5	1.0	1.6	100	107	15	205	8.5	8.3	7.0
11	10	6.0	4.3	1.2	1.7	200	120	14	146	8.5	8.1	6.4
12	11	5.5	4.0	1.5	2.0	800	143	35	101	8.2	8.4	6.6
13	11	5.5	4.0	1.6	3.0	751	180	75	68	8.5	8.1	8.0
14	12	5.5	3.8	1.8	6.0	640	146	70	56	8.5	7.3	8.6
15	11	5.0	3.5	1.9	10	497	115	624	43	8.9	7.1	8.6
16	10	5.0	3.5	1.8	20	370	84	2080	36	11	7.1	9.1
17	10	5.0	3.3	1.7	35	309	68	1980	68	9.8	6.9	9.4
18	10	4.9	3.0	1.7	50	335	57	916	166	17	7.2	12
19	11	4.8	2.7	1.6	55	201	57	481	131	17	9.6	11
20	11	4.8	3.0	1.6	60	120	54	416	174	19	7.4	11
21	11	5.0	3.0	1.5	55	102	57	1740	109	18	21	12
22	11	5.5	3.2	1.5	50	123	75	1330	53	12	42	11
23	10	5.5	3.3	1.6	40	101	84	582	37	11	43	10
24	10	5.5	3.3	2.0	30	133	63	293	25	19	26	9.7
25	10	5.3	3.2	2.3	30	217	54	205	17	62	15	9.7
26	9.5	5.0	3.0	2.4	35	170	42	148	15	70	11	10
27	9.0	4.8	2.9	2.4	40	185	33	91	14	107	8.9	14
28	9.0	4.7	2.7	2.3	40	178	30	82	13	212	8.3	21
29	8.5	4.6	2.5	2.1	---	424	29	67	12	197	7.9	18
30	8.0	4.5	2.3	2.1	---	852	24	661	13	172	7.3	20
31	7.5	---	2.1	2.0	---	787	---	397	---	120	7.1	---
TOTAL	305.3	173.4	114.1	53.8	578.9	7923	3191	12440	3055	1217.1	526.6	295.1
MEAN	9.85	5.78	3.68	1.74	20.7	256	106	401	102	39.3	17.0	9.84
MAX	12	8.0	5.0	2.4	60	852	396	2080	412	212	71	21
MIN	7.5	4.5	2.1	1.0	1.5	30	24	13	12	8.2	6.9	6.3
AC-FT	606	344	226	107	1150	15720	6330	24670	6060	2410	1040	585

CAL YR 1981 TOTAL 7032.8 MEAN 19.3 MAX 778 MIN 2.1 AC-FT 13950
WTR YR 1982 TOTAL 29873.3 MEAN 81.8 MAX 2080 MIN 1.0 AC-FT 59250

06357000 SHADEHILL RESERVOIR AT SHADEHILL, SD

LOCATION.--Lat 45°45'12", long 102°12'12", in E½ sec.25, T.21 N., R.15 E., Perkins County, Hydrologic Unit 10130302, at dam on Grand River, 1.3 mi (2.1 km) southwest of Shadehill.

DRAINAGE AREA.--3,120 m^2 (8,080 km^2), approximately.

PERIOD OF RECORD.--June 1950 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Apr. 3, 1952, occasional elevations obtained by level circuits and Apr. 3, 1952, to Apr. 28, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by earthfill dam. Storage began July 1, 1950; dam completed August 1951. Conservation storage, 81,443 acre-ft (100 hm^3) between elevations 2,250.8 ft (686.04 m), invert of canal and river outlet, and elevation 2,272.0 ft (692.51 m), crest of morning-glory spillway. Dead storage, 58,231 acre-ft (71.8 hm^3) below elevation 2,250.8 ft (686.04 m). Flood control, 217,708 acre-ft (268 hm^3) between elevations 2,272.0 ft (692.51 m) and 2,302.0 ft (701.65 m), crest of emergency spillway. Surcharge, 111,203 acre-ft (137 hm^3) at elevation 2,312.0 ft (704.70 m), maximum pool elevation. Total reservoir capacity is 468,585 acre-ft (578 hm^3) at elevation 2,312.0 ft (704.70 m). The reservoir provides flood control and water for irrigation purposes. Figures given herein represent usable contents above elevation 2,250.8 ft (686.04 m). Prior to Oct. 1, 1968, reservoir contents published as total contents and included dead storage.

COOPERATION.--Records of elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum usable contents observed, 259,900 acre-ft (320 hm^3) Apr. 10, 1952, elevation, 2,297.86 ft (700.388 m); minimum usable observed since first filling to spillway level, 24,941 acre-ft (30.8 hm^3) Nov. 17, 1981, elevation, 2,258.62 ft (688.427 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 99,975 acre-ft (123 hm^3) May 23, elevation, 2,275.66 ft (693.621 m); minimum, 24,941 acre-ft (30.8 hm^3) Nov. 17, elevation, 2,258.62 ft (688.427 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents
Sept. 30	2259.19	26956	
Oct. 31	2258.75	25406	-1550
Nov. 30	2258.78	25514	+108
Dec. 31	2258.89	25910	+396
CAL YR 1981			-6367
Jan. 31	2258.90	25946	+36
Feb. 28	2263.67	44214	+18268
Mar. 31	2269.51	69609	+25395
Apr. 30	2272.79	85325	+15716
May 31	2273.95	91133	+5808
June 30	2271.48	78921	-12212
July 31	2271.15	77335	-1586
Aug. 31	2270.46	74050	-3285
Sept. 30	2269.11	67763	-6287
WTR YR 1982			+40807

06357500 GRAND RIVER AT SHADEHILL, SD

LOCATION.--Lat 45°45'25", long 102°11'41", in NW¼NW¼ sec.30, T.21 N., R.16 E., Perkins County, Hydrologic Unit 10130303, on left bank 0.2 mi (0.3 km) downstream from Shadehill Dam, 1.1 mi (1.8 km) southwest of Shadehill, and 12.0 mi (19.3 km) southwest of Lemmon.

DRAINAGE AREA.--3,120 mi^2 (8,080 km^2), approximately.

PERIOD OF RECORD.--February 1943 to current year. Records for July 1904 to October 1906 collected at site 4 mi (6 km) upstream and published as "at Seim" in WSP 130, 172, and 208 have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1279: 1943(M). See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 2,192.48 ft (668.268 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 31, 1947, nonrecording gage, and Aug. 31, 1947, to Oct. 24, 1958, water-stage recorder at site 0.8 mi (1.3 km) downstream at datum 6.02 ft (1.835 m) lower.

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year. Flow completely regulated by Shadehill Reservoir since July 1, 1950. (See station 06357000.)

AVERAGE DISCHARGE.--39 years, 116 ft^3/s (3.285 m^3/s), 84,040 acre-ft/yr (104 hm^3/yr); median of yearly mean discharges, 66 ft^3/s (1.87 m^3/s), 47,800 acre-ft/yr (59 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,000 ft^3/s (1,640 m^3/s) Apr. 16, 1950, gage height, 21.0 ft (6.40 m), from floodmarks upstream from bridge; 19.06 ft (5.809 m), from floodmark in gage well, unreliable, site and datum then in use; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,510 ft^3/s (71.1 m^3/s) May 23; minimum daily discharge, 0.16 ft^3/s (0.005 m^3/s) Apr. 6.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 22, Dec. 24-28, Apr. 23, 24, Apr. 29 to May 15, Aug. 6 to Sept. 1; stage-discharge relation affected by ice Dec. 23, Dec. 29 to Feb. 20, Feb. 26 to Mar. 7)

2.28	0	2.8	20	4.5	414
2.3	.40	3.0	39	5.0	654
2.4	2.7	3.2	63	6.0	1300
2.5	5.5	3.5	115	7.5	2760
2.6	9.2	4.0	232		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	11	9.0	9.5	10	4.5	.76	252	1000	500	44	105
2	14	11	8.9	9.5	10	3.0	1.2	230	900	150	44	103
3	14	12	9.0	9.5	9.5	2.0	1.4	215	700	100	45	103
4	14	11	9.5	9.5	9.5	1.8	.51	204	600	90	45	101
5	14	11	8.9	10	10	1.8	.45	180	550	80	82	101
6	14	11	8.8	11	10	1.9	.16	166	400	75	109	101
7	13	11	8.7	11	10	2.0	.33	146	300	100	109	99
8	13	11	8.9	11	10	2.1	9.0	135	200	95	109	99
9	13	11	8.9	11	10	2.1	42	127	300	90	111	97
10	13	11	8.9	10	10	.88	68	126	500	80	111	95
11	13	11	8.8	10	11	.72	118	118	600	80	112	95
12	12	10	8.9	10	11	1.4	297	114	500	75	113	95
13	13	10	8.9	11	12	3.1	616	118	450	75	113	93
14	12	10	9.1	11	12	.55	1000	142	400	70	113	93
15	12	10	9.3	11	13	.66	1100	184	450	65	113	92
16	12	10	9.4	11	14	.63	900	315	430	60	115	92
17	12	10	9.3	10	15	.75	800	790	450	55	115	92
18	12	11	9.8	10	15	.76	700	1310	500	50	114	88
19	12	10	10	10	15	5.0	600	1470	400	45	116	90
20	12	9.8	9.4	10	14	18	700	1540	350	45	115	86
21	12	9.4	8.6	10	14	8.0	600	1790	300	45	117	86
22	12	9.7	8.8	10	14	2.7	549	2400	250	46	117	86
23	11	9.7	9.0	10	8.3	1.2	523	2510	270	45	113	89
24	11	9.1	8.9	11	2.0	.79	414	2300	300	44	125	88
25	11	9.3	8.9	11	1.4	.46	380	2000	628	44	131	90
26	11	9.0	8.9	12	2.0	.60	350	1780	615	43	131	90
27	11	9.3	8.8	11	3.0	2.5	320	1420	594	44	131	93
28	11	9.2	8.5	11	5.0	.42	310	1200	550	44	129	94
29	11	9.2	8.5	11	---	.74	296	1100	600	44	129	94
30	11	9.3	9.0	10	---	1.9	277	1000	700	44	117	96
31	11	---	9.0	10	---	.87	---	900	---	45	103	---
TOTAL	381	306.0	279.3	323.0	280.7	73.83	10973.81	26282	14787	2468	3291	2826
MEAN	12.3	10.2	9.01	10.4	10.0	2.38	366	848	493	79.6	106	94.2
MAX	14	12	10	12	15	18	1100	2510	1000	500	131	105
MIN	11	9.0	8.5	9.5	1.4	.42	.16	114	200	43	44	86
AC-FT	756	607	554	641	557	146	21770	52130	29330	4900	6530	5610

CAL YR 1981 TOTAL 7356.80 MEAN 20.2 MAX 49 MIN 8.0 AC-FT 14590
WTR YR 1982 TOTAL 62271.64 MEAN 171 MAX 2510 MIN .16 AC-FT 123500

06357800 GRAND RIVER AT LITTLE EAGLE, SD

LOCATION.--Lat 45°39'28", long 100°49'04", in NE¼NE¼ sec.32, T.20 N., R.27 E., Corson County, Hydrologic Unit 10130303, on left bank at downstream side of bridge on State Highway 63, 1.3 mi (2.1 km) southwest of Little Eagle and 4.7 mi (7.6 km) downstream from Little Oak Creek.

DRAINAGE AREA.--5,370 mi^2 (13,910 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,628.63 ft (496.406 m) National Geodetic Vertical Datum of 1929. Prior to May 12, 1959, nonrecording gage, and May 12, 1959, to Aug. 11, 1970, water-stage recorder at site 0.6 mi (1.0 km) downstream at datum 2.00 ft (0.610 m) lower.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Shadehill Reservoir 144 mi (232 km) upstream. (See station 06357000.)

AVERAGE DISCHARGE.--24 years, 240 ft^3/s (6.797 m^3/s), 173,900 acre-ft/yr (214 hm^3/yr); median of yearly mean discharges, 190 ft^3/s (5.38 m^3/s), 138,000 acre-ft/yr (170 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft^3/s (538 m^3/s) Mar. 23, 1978; maximum gage height, 21.76 ft (6.632 m) Mar. 18, 1966, from floodmarks, ice jam, site and datum then in use; no flow at times in 1958-62, 1969, 1975, 1977-82.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,740 ft^3/s (276 m^3/s) at 1030 hours, May 22, gage height, 12.15 ft (3.703 m); minimum daily discharge, 1.1 ft^3/s (0.03 m^3/s) Jan. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	20	11	1.7	2.0	120	6640	278	1220	648	30	107
2	32	32	12	1.6	1.8	110	4300	308	1160	693	32	132
3	32	18	11	1.6	1.8	102	2720	358	1270	246	39	164
4	31	21	11	1.5	1.7	95	1670	220	980	140	42	132
5	25	29	12	1.5	1.5	90	995	205	894	130	44	120
6	19	31	12	1.5	1.7	95	636	205	845	96	43	115
7	16	12	11	1.4	2.0	100	441	230	667	82	43	110
8	12	16	10	1.3	2.0	120	350	202	680	140	40	110
9	11	21	10	1.2	2.2	200	289	144	412	130	40	123
10	9.5	17	9.0	1.1	2.5	500	289	291	224	78	62	117
11	8.1	24	9.0	1.1	2.5	1000	852	2410	478	62	77	102
12	7.7	34	6.0	1.2	3.0	2000	2470	3930	712	110	81	80
13	7.7	17	4.0	1.2	4.0	3000	2810	2600	617	98	86	77
14	7.7	12	3.0	1.4	5.0	2780	2620	1300	556	89	87	75
15	26	12	2.5	1.6	6.0	2530	2850	950	505	70	90	73
16	72	13	2.2	1.7	7.0	1720	1990	1450	528	96	89	70
17	45	14	2.0	1.7	10	1080	1510	1610	510	87	84	68
18	31	8.8	2.0	1.6	15	494	972	1620	510	78	81	62
19	23	12	2.2	1.5	50	385	873	1780	568	70	82	60
20	18	11	2.5	1.5	400	300	804	3060	467	68	84	54
21	15	12	2.5	1.4	500	300	908	6470	432	45	82	78
22	13	12	2.4	1.4	450	320	943	8880	394	31	77	78
23	9.5	12	2.3	1.5	300	370	758	6790	301	28	86	77
24	11	12	2.2	2.0	200	350	394	5690	417	45	87	77
25	14	13	2.0	2.5	150	370	494	4880	436	34	101	78
26	16	13	2.0	2.7	160	400	236	3510	462	47	117	75
27	7.7	12	1.9	2.5	170	600	350	2750	516	46	99	80
28	8.1	11	1.8	2.4	150	894	282	2590	623	45	98	77
29	9.5	9.5	1.8	2.2	---	1260	372	2240	611	39	102	67
30	6.8	13	1.7	2.2	---	3370	440	1950	586	35	101	98
31	9.5	---	1.7	2.0	---	7780	---	1550	---	30	105	---
TOTAL	585.8	494.3	166.7	51.7	2601.7	32835	41258	70451	18581	3636	2311	2736
MEAN	18.9	16.5	5.38	1.67	92.9	1059	1375	2273	619	117	74.5	91.2
MAX	72	34	12	2.7	500	7780	6640	8880	1270	693	117	164
MIN	6.8	8.8	1.7	1.1	1.5	90	236	144	224	28	30	54
AC-FT	1160	980	331	103	5160	65130	81840	139700	36860	7210	4580	5430

CAL YR 1981 TOTAL 17564.40 MEAN 48.1 MAX 1430 MIN .00 AC-FT 34840
WTR YR 1982 TOTAL 175708.20 MEAN 481 MAX 8880 MIN 1.1 AC-FT 348500

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956, 1969, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1976, October 1977 to September 1981.
WATER TEMPERATURES: October 1975 to September 1980.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976.

REMARKS.--No flow Jan. 26 to Feb. 21.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,100 micromhos Dec. 4, 7-9, 1976; minimum daily, 290 micromhos Feb. 7, 1976.
WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 26, 1976; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 19,000 mg/L May 2, 1972; minimum daily mean, 0 mg/L Jan. 10, 11, Feb. 5-10, 1975.
SEDIMENT LOADS: Maximum daily, 259,000 tons (235,000 tonnes) Mar. 12, 1972; minimum daily, 0 ton (0 tonne) Jan. 10, 11, Feb. 5-10, 1975.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV											
18...	1000	8.8	1900	8.1	3.0	46	7.9	K16	42	252	0
JAN											
06...	0950	1.6	3860	8.0	.5	4.7	12.8	K13	K10	604	0
MAR											
03...	1220	27	--	7.2	.0	--	11.1	K84	>2000	--	--
30...	1000	1900	437	7.5	5.0	900	10.8	81	K4	74	0
APR											
29...	1100	374	--	--	--	--	--	--	--	--	--
MAY											
20...	1300	1890	--	--	--	--	--	--	--	--	--
26...	1430	3270	1025	7.8	17.8	330	7.3	K7	K27	147	0
JUL											
21...	0830	58	1667	8.1	23.5	27	7.0	--	88	245	0
AUG											
19...	0805	83	1650	8.2	25.5	--	6.8	--	325	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV											
18...	53	29	400	77	11	9.0	680	390	14	.4	5.5
JAN											
06...	120	74	850	75	15	15	1400	910	32	.8	9.6
MAR											
03...	--	--	--	--	--	--	--	--	--	--	--
30...	18	7.1	68	64	3.5	6.5	120	78	5.6	.1	6.2
APR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
26...	34	15	170	70	6.3	9.2	330	197	6.9	.2	7.0
JUL											
21...	52	28	300	72	8.6	11	530	313	12	.3	14
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--

> More than.
K Non-ideal colony count.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)
NOV 18...	1470	1440	2.0	34.9	.10	<.060	.08	1.40	.010	.030	.09
JAN 06...	3070	3050	4.2	13.3	.35	.220	.28	1.50	.020	.030	.09
MAR 03...	--	--	--	--	.83	.500	.64	2.30	.090	.160	.49
30...	311	276	.42	1600	--	--	--	--	--	--	--
APR 29...	--	--	--	--	--	--	--	--	--	--	--
MAY 20...	--	--	--	--	--	--	--	--	--	--	--
26...	704	691	.96	6220	.16	.140	.18	2.00	.140	.450	1.4
JUL 21...	1150	1140	1.6	179	<.10	.080	.10	3.10	.020	.080	.25
AUG 19...	--	--	--	--	.24	.140	.18	.80	<.010	.060	.18

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)
NOV 18...	1000	--	0	--	--	--	--	--	--	--	--
JAN 06...	0950	2	1	1	<1	--	1	<10	--	<10	1
MAY 26...	1430	4	2	2	<1	--	<3	20	--	<10	7
JUL 21...	0830	2	0	2	<1	--	<1	10	--	<10	<1

DATE	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
NOV 18...	--	--	--	0	--	--	--	--	0	--	--
JAN 06...	--	<1	9	4	5	250	30	1	--	<1	170
MAY 26...	--	<1	27	10	17	21000	92	5	2	3	720
JUL 21...	--	<1	5	0	10	910	9	<1	--	<1	80

DATE	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71695)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
NOV 18...	100	--	--	1.0	--	--	0	--	--	6	--
JAN 06...	10	160	.7	.2	.5	2	0	2	50	10	40
MAY 26...	710	7	.4	--	<.1	6	5	1	80	70	13
JUL 21...	70	9	.3	.1	.2	1	--	<1	10	0	25

< Less than.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL (UG/L) (39570)
NOV 18...	1000	--	.0	--	.0	--	.0	--	.0	--	.0	--
MAR 03...	1220	<.01	--	<.10	--	<.01	--	<.01	--	<.01	--	.02
MAY 26...	1430	<.01	--	<.10	--	<.01	--	<.01	--	<.01	--	<.01

DATE	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)
NOV 18...	--	.0	--	.0	--	--	.0	--	.0	--	.0	--
MAR 03...	<.01	--	<.01	--	.00	<.01	--	<.01	--	<.01	--	.00
MAY 26...	<.01	--	<.01	--	<.01	<.01	--	<.01	--	<.01	--	<.01

DATE	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL TRITHION, TOTAL (UG/L) (39790)	PARATHION, TOTAL (UG/L) (39540)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
NOV 18...	--	.0	--	--	--	--	.0	--	--	--	--
MAR 03...	<.01	--	.00	.00	.00	<1	--	.00	.11	<.01	<.01
MAY 26...	<.01	--	<.01	<.01	<.01	<1	--	<.01	.07	<.01	<.01

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 18...	1000	8.8	188	4.5	98	--	--	--	100	--	--	--
JAN 06...	0950	1.6	--	--	--	--	--	--	--	--	--	--
MAR 03...	1220	27	--	--	--	--	--	--	--	--	--	--
30...	1000	1900	3270	16800	94	--	--	--	--	--	--	--
APR 29...	1100	374	331	334	57	--	--	--	--	--	--	--
MAY 20...	1300	1890	852	4350	--	--	--	--	--	--	--	--
26...	1430	3270	809	7140	97	--	--	--	--	--	--	--
JUL 21...	0830	58	88	14	94	--	--	--	--	--	--	--
AUG 19...	0805	83	147	33	62	--	--	--	--	--	--	--

< Less than.

06359500 MOREAU RIVER NEAR FAITH, SD

LOCATION.--Lat 45°11'52", long 102°09'22", in NW¼NW¼ sec.10, T.14 N., R.16 E., Perkins County, Hydrologic Unit 10130306, on left bank 10 ft (3 m) downstream from bridge on State Highway 73, 3.1 mi (5.0 km) downstream from Rabbit Creek and 13.5 mi (21.7 km) northwest of Faith.

DRAINAGE AREA.--2,660 mi^2 (6,890 km^2), approximately.

PERIOD OF RECORD.--March 1943 to current year.

REVISED RECORDS.--WSP 1176: 1944. WSP 1279: 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 2,238.68 ft (682.350 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1949, nonrecording gage 0.3 mi (0.5 km) upstream and Oct. 5, 1949, to July 16, 1959, nonrecording gage and crest-stage gage at present site; both at datum 1.0 ft (0.30 m) higher. July 17, 1959, to Sept. 1, 1971, recording gage at site 500 ft (152 m) downstream at present datum.

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--39 years, 136 ft^3/s (3.852 m^3/s), 98,530 acre-ft/yr (121 hm^3/yr); median of yearly mean discharges, 95 ft^3/s (2.69 m^3/s), 68,800 acre-ft/yr (85 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft^3/s (736 m^3/s) Apr. 9, 1944, gage height, 20.9 ft (6.37 m), from floodmarks, site and datum then in use, from rating curve extended above 12,000 ft^3/s (340 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in 1944, 1946, 1948-51, 1955-66, 1968-71, 1974-75, 1978-81.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s (42.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 1	0015	3220	91.2	9.04	2.755
May 22	1630	*16700	473	*18.04	5.499
May 31	1330	2850	80.7	8.58	2.615
June 20	1915	1620	45.9	6.79	2.070

Minimum daily discharge, 0.65 ft^3/s (0.018 m^3/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	2.7	1.8	.85	.75	80	2850	48	1360	83	82	13
2	12	3.3	1.8	.80	.75	75	2050	43	622	78	56	9.1
3	9.6	2.2	1.8	.80	.75	70	1090	40	393	57	39	7.3
4	8.7	3.3	1.8	.80	.70	70	495	38	292	69	34	7.0
5	8.2	3.0	1.8	.75	.70	65	348	35	326	75	26	6.8
6	8.2	2.5	1.9	.75	.75	65	239	32	207	96	19	5.9
7	7.7	2.5	1.8	.75	.75	70	158	29	180	72	41	4.9
8	6.8	2.3	1.7	.70	.75	80	122	27	173	59	408	6.4
9	7.3	2.3	1.7	.70	.80	100	154	25	168	63	207	4.3
10	7.7	2.3	1.7	.65	.80	200	239	26	133	47	144	2.7
11	7.7	2.3	1.6	.70	.85	250	425	26	144	35	88	3.3
12	75	2.3	1.5	.70	.85	280	493	27	131	30	81	5.3
13	46	2.3	1.4	.75	.90	300	463	50	111	53	65	7.3
14	21	2.2	1.3	.80	.90	270	379	291	99	31	40	7.3
15	14	2.0	1.2	.80	.95	250	344	2020	92	25	27	5.3
16	14	1.8	1.2	.75	1.0	200	270	5110	92	20	17	6.4
17	8.2	1.8	1.1	.80	8.0	170	198	5870	135	38	72	8.7
18	5.9	1.8	1.1	.75	20	160	139	6380	231	42	73	8.2
19	4.9	1.7	1.2	.75	200	150	112	3150	210	414	53	8.2
20	4.3	1.6	1.3	.75	250	130	97	3910	889	198	64	8.7
21	4.3	1.7	1.3	.70	230	120	85	9290	1070	120	27	10
22	4.6	1.8	1.3	.70	150	110	68	13800	470	57	35	12
23	4.4	1.8	1.2	.75	120	100	53	7710	243	49	114	11
24	4.3	1.8	1.2	.80	100	150	71	2320	159	169	128	10
25	4.0	1.7	1.1	.85	100	180	63	1330	131	156	70	9.6
26	3.3	1.7	1.0	.90	120	184	64	822	130	169	36	9.6
27	3.7	1.7	.95	.85	110	242	93	574	114	213	24	11
28	3.3	1.7	.95	.85	100	254	79	421	110	112	20	21
29	3.3	1.8	.90	.80	---	1000	65	922	103	100	16	38
30	3.0	1.8	.90	.80	---	2500	56	1280	91	200	24	56
31	2.3	---	.85	.80	---	2940	---	2650	---	124	13	---
TOTAL	332.7	63.7	42.35	23.90	1520.95	10815	11358	68296	8609	3054	2143	324.3
MEAN	10.7	2.12	1.37	.77	54.3	349	379	2203	287	98.5	69.1	10.8
MAX	75	3.3	1.9	.90	250	2940	2850	13800	1360	414	408	56
MIN	2.3	1.6	.85	.65	.70	65	53	25	91	20	13	2.7
AC-FT	660	126	84	47	3020	21450	22530	135500	17080	6060	4250	643

CAL YR 1981 TOTAL 6443.51 MEAN 17.7 MAX 459 MIN .15 AC-FT 12780
WTR YR 1982 TOTAL 106582.90 MEAN 292 MAX 13800 MIN .65 AC-FT 211400

06360500 MOREAU RIVER NEAR WHITEHORSE, SD

LOCATION.--Lat 45°15'21", long 100°50'33", in SW¼SE¼ sec.17, T.15 N., R.27 E., Dewey County, Hydrologic Unit 10130306, on left bank 30 ft (9 m) downstream from bridge, 2.4 mi (3.9 km) southeast of Whitehorse, 8.8 mi (14.2 km) downstream from Little Moreau River, and 16.3 mi (26.2 km) southeast of town of Timber Lake.

DRAINAGE AREA.--4,880 mi² (12,640 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1954 to current year.

REVISED RECORDS.--WRD SD-78-1: 1977.

GAGE.--Water-stage recorder. Datum of gage is 1,661.48 ft (506.419 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are poor. U.S. Weather Bureau gage-height telemeter at station.

AVERAGE DISCHARGE.--28 years, 205 ft³/s (5.806 m³/s), 148,500 acre-ft/yr (183 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,700 ft³/s (784 m³/s) May 24, 1982, gage height, 26.00 ft (7.925 m); maximum gage height, 26.20 ft (7.986 m) Mar. 14, 1972 (backwater from ice); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1953 reached a stage of about 26.2 ft (7.99 m). Flood in March 1947 was probably higher.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s (51.0 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 1	1030	5060	143	12.10	3.688	May 24	1015	*27700	784	*26.00	7.925
May 17	0230	7810	221	15.64	4.767	June 2	0615	2640	74.8	8.41	2.563

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	450	4880	108	1700	159	405	95
2	.00	.00	.00	.00	.00	400	4570	101	2420	195	323	68
3	.00	.00	.00	.00	.00	400	3730	87	1380	195	225	58
4	.00	.00	.00	.00	.00	350	2720	62	888	160	152	46
5	.00	.00	.00	.00	.00	300	1610	60	667	141	121	37
6	.00	.00	.00	.00	.00	270	913	50	540	119	95	31
7	.00	.00	.00	.00	.00	270	656	41	502	102	73	21
8	.00	.00	.00	.00	.00	250	495	35	467	90	56	16
9	.00	.00	.00	.00	.00	250	436	45	404	88	44	15
10	.00	.00	.00	.00	.00	300	460	719	365	106	40	13
11	.00	.00	.00	.00	.00	500	436	469	331	111	200	13
12	.00	.00	.00	.00	.00	1000	1170	179	322	97	211	15
13	.00	.00	.00	.00	.00	1100	1360	207	288	117	140	13
14	.00	.00	.00	.00	.00	900	1280	2760	659	96	100	15
15	.00	.00	.00	.00	.00	722	1140	4650	529	77	150	17
16	.18	.00	.00	.00	.00	688	960	6010	427	62	122	13
17	1.4	.00	.00	.00	.00	722	758	7500	905	58	86	12
18	27	.00	.00	.00	1.0	603	636	7240	951	59	65	13
19	19	.00	.00	.00	5.0	550	525	6610	593	52	50	13
20	6.5	.00	.00	.00	40	500	414	5950	443	41	43	6.5
21	2.9	.00	.00	.00	200	400	331	6130	361	36	72	8.1
22	1.6	.00	.00	.00	400	300	253	9690	467	48	138	5.6
23	.84	.00	.00	.00	900	200	179	13600	1010	243	113	4.4
24	.33	.00	.00	.00	950	150	173	23700	659	230	70	3.8
25	.28	.00	.00	.00	800	124	138	10300	455	205	171	3.8
26	.02	.00	.00	.00	500	172	113	3320	341	188	265	3.6
27	.00	.00	.00	.00	450	230	95	2090	276	171	196	5.6
28	.00	.00	.00	.00	500	338	102	1440	236	144	167	4.8
29	.00	.00	.00	.00	---	1120	97	1090	203	124	132	4.1
30	.00	.00	.00	.00	---	1960	93	977	177	160	111	3.6
31	.00	---	.00	.00	---	3640	---	1320	---	288	97	---
TOTAL	60.05	.00	.00	.00	4746.00	19159	30723	116540	18966	3962	4233	577.9
MEAN	1.94	.000	.000	.000	170	618	1024	3759	632	128	137	19.3
MAX	27	.00	.00	.00	450	3640	4880	23700	2420	288	405	95
MIN	.00	.00	.00	.00	.00	124	93	35	177	36	40	3.6
AC-FT	119	.00	.00	.00	9410	38000	60940	231200	37620	7860	8400	1150

CAL YR 1981 TOTAL 14414.71 MEAN 39.5 MAX 758 MIN .00 AC-FT 28590
WTR YR 1982 TOTAL 198966.95 MEAN 545 MAX 23700 MIN .00 AC-FT 394700

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969, 1972-76, 1978 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: October 1970 to September 1976.

REMARKS.--No flow Oct. 7 to Nov. 17, Jan. 6 to Mar. 9, May 27 to June 2, July 14 to Sept. 30. Sediment-discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,300 mg/L May 9, 1972; minimum daily mean, 0 mg/L on many days most years.
SEDIMENT LOADS: Maximum daily, 420,000 tons (381,000 tonnes) May 10, 1975; minimum daily, 0 ton (0 tonne) on many days each year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
MAR											
29...	1200	1000	953	5.8	5.0	4100	11.2	160	K6	259	195
MAY											
25...	1315	7950	559	7.8	17.0	860	6.6	K45	160	133	58
JUL											
20...	1045	38	2050	8.2	27.5	54	7.3	K20	180	340	131
AUG											
19...	1010	52	1092	8.3	27.5	--	6.2	--	>1000	--	--

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
MAR											
29...	74	18	130	51	3.6	7.3	400	64	8.0	.2	6.8
MAY											
25...	38	9.2	75	50	2.9	6.7	210	75	6.8	.3	7.5
JUL											
20...	80	34	340	68	8.3	12	850	209	11	.4	9.5
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)
MAR											
29...	718	723	.98	1940	--	--	--	--	--	--	--
MAY											
25...	454	390	.62	9750	.21	.230	.30	2.80	.170	2.40	7.4
JUL											
20...	1490	1460	2.0	151	<.10	.070	.09	2.40	.090	.080	.25
AUG											
19...	--	--	--	--	<.10	.060	.08	.70	<.010	.070	.21

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)
MAY											
25...	1315	20	18	2	1	0	<1	100	--	<10	16
JUL											
20...	1045	2	0	2	<1	--	<1	10	0	10	1

< Less than.
> More than.
K Non-ideal colony count.

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
MAY 25...	3000	5	.7	.3	.4	12	9	3	580	--	<12
JUL 20...	90	40	.4	.2	.2	2	--	<1	30	0	40

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
MAY 25...	15	1	160	150	14	130000	38	4	3	1	3000
JUL 20...	--	<1	10	0	14	1900	60	<1	--	<1	130

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
MAR 29...	1200	1000	1220	3290	98	--	--	--	--	--	--	--
APR 28...	1150	--	613	--	--	--	--	--	--	--	--	--
MAY 25...	1315	7950	7950	171000	--	--	--	--	96	100	--	--
JUL 20...	1045	38	108	11	96	--	--	--	--	--	--	--
AUG 19...	1010	52	40	5.6	94	--	--	--	--	--	--	--

< Less than.

06392900 BEAVER CREEK AT MALLO CAMP, NEAR FOUR CORNERS, WY

LOCATION.--Lat 44°05'04", long 104°03'41", in NE¼NE¼ sec.4, T.47 N., R.60 W., Weston County, Hydrologic Unit 10120107, between Forest Service Road 811 and right bank at Mallo Campgrounds, 300 ft (91 m) upstream from mouth, 800 ft (244 m) upstream from dam on Stockade Beaver Creek, and 3.8 mi (6.1 km) east of Four Corners.

DRAINAGE AREA.--10.3 mi² (26.7 km²).

PERIOD OF RECORD.--October 1974 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 6,030 ft (1,840 m), from topographic map.

REMARKS.--Records fair except those for winter periods and those for period of no gage-height record, Apr. 19 to May 26, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--8 years, 1.94 ft³/s (0.055 m³/s), 1,410 acre-ft/yr (1.74 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21 ft³/s (0.59 m³/s) Apr. 26, 1975, gage height, 5.40 ft (1.646 m); minimum daily, 0.23 ft³/s (0.007 m³/s) Oct. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.0 ft³/s (0.198 m³/s) at 1700 hours, Aug. 6, gage height, 4.80 ft (1.463 m), no peak above base of 10 ft³/s (0.28 m³/s); maximum gage height, 7.97 ft (2.429 m) Nov. 30 (backwater from ice); minimum discharge, 1.3 ft³/s (0.037 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	2.2	1.7	1.9	1.9	1.9	2.2	2.4	2.5	2.3	2.2	2.2
2	2.2	2.2	1.8	1.9	1.9	1.9	2.2	2.5	2.5	2.3	2.2	2.2
3	2.2	2.2	1.8	1.9	1.9	2.0	2.1	2.5	2.5	2.3	2.2	2.2
4	2.2	2.2	1.9	1.9	1.9	2.0	2.1	2.5	2.5	2.2	2.4	2.2
5	2.2	2.2	1.9	1.8	1.9	2.0	2.1	2.5	2.4	2.2	2.5	2.3
6	2.2	2.1	1.9	1.8	1.9	1.9	2.2	2.4	2.5	2.3	3.1	2.3
7	2.2	2.1	1.9	1.7	1.9	1.8	2.2	2.4	2.4	2.3	2.6	2.3
8	2.3	2.1	1.9	1.6	1.9	1.9	2.2	2.4	2.4	2.3	2.4	2.3
9	2.2	2.1	1.9	1.5	1.9	1.9	2.2	2.4	2.4	2.3	2.5	2.3
10	2.3	2.1	1.8	1.3	1.9	2.0	2.1	2.4	2.4	2.2	2.4	2.3
11	2.2	2.1	1.8	1.4	1.9	2.0	2.1	2.5	2.3	2.2	2.3	2.2
12	2.3	2.1	1.8	1.5	1.7	2.0	2.1	2.5	2.3	2.2	2.3	2.2
13	2.2	2.2	1.8	1.6	1.5	2.0	2.1	2.5	2.3	2.2	2.2	2.2
14	2.2	2.2	1.8	1.7	1.8	1.9	2.2	2.5	2.3	2.2	2.2	2.2
15	2.2	2.2	1.8	1.8	2.0	1.9	2.3	2.5	2.3	2.2	2.2	2.2
16	2.2	2.2	1.8	1.9	2.0	1.9	2.3	2.6	2.3	2.2	2.2	2.1
17	2.2	2.2	1.9	1.9	1.9	1.8	2.3	2.7	2.3	2.2	2.2	2.1
18	2.2	2.1	1.9	2.0	1.9	1.9	2.2	2.8	2.2	2.2	2.2	2.1
19	2.2	2.0	1.9	2.0	1.9	2.0	2.0	2.8	2.2	2.2	2.2	2.1
20	2.2	1.9	1.9	1.7	1.9	2.0	2.0	2.8	2.2	2.2	2.2	2.1
21	2.2	2.1	2.0	1.9	1.9	2.0	2.0	2.7	2.2	2.2	2.2	2.1
22	2.3	2.2	1.9	1.9	2.0	2.1	2.0	2.7	2.1	2.2	2.2	2.0
23	2.3	2.2	1.9	1.9	2.0	2.1	2.0	2.7	2.1	2.1	2.1	2.0
24	2.3	2.2	1.9	1.9	2.0	2.1	2.1	2.8	2.1	2.2	2.2	2.1
25	2.3	2.2	2.0	1.9	2.0	2.1	2.1	2.8	2.2	2.2	2.2	2.1
26	2.3	2.1	2.0	1.9	2.0	2.0	2.1	2.7	2.2	2.3	2.2	2.2
27	2.3	2.0	1.9	1.9	1.9	2.0	2.2	2.7	2.3	2.2	2.2	2.2
28	2.3	1.9	1.9	1.9	1.9	2.0	2.2	2.8	2.2	2.4	2.2	2.2
29	2.3	1.9	1.9	1.9	---	2.1	2.2	2.7	2.2	2.3	2.2	2.2
30	2.3	1.8	1.9	1.9	---	2.2	2.3	2.6	2.2	2.3	2.2	2.2
31	2.3	---	1.9	1.9	---	2.2	---	2.6	---	2.2	2.2	---
TOTAL	69.6	63.3	58.1	55.7	53.2	61.6	64.4	80.4	69.0	69.3	70.8	65.4
MEAN	2.25	2.11	1.87	1.80	1.90	1.99	2.15	2.59	2.30	2.24	2.28	2.18
MAX	2.3	2.2	2.0	2.0	2.0	2.2	2.3	2.8	2.5	2.4	3.1	2.3
MIN	2.2	1.8	1.7	1.3	1.5	1.8	2.0	2.4	2.1	2.1	2.1	2.0
AC-FT	138	126	115	110	106	122	128	159	137	137	140	130

CAL YR 1981 TOTAL 2890.51 MEAN 7.92 MAX 13 MIN .91 AC-FT 5730
WTR YR 1982 TOTAL 780.80 MEAN 2.14 MAX 3.1 MIN 1.3 AC-FT 1550

06392950 STOCKADE BEAVER CREEK NEAR NEWCASTLE, WY

LOCATION.--Lat 43°51'30", long 104°06'23", in SW¼SE¼ sec.19, T.45 N., R.60 W., Weston County, Hydrologic Unit 10120107, on left bank at downstream side of bridge on county highway 0.6 mi (1.0 km) upstream from South Draw, 2.5 mi (4.0 km) upstream of LAK Reservoir Dam, and 4.7 mi (7.6 km) east of Newcastle.

DRAINAGE AREA.--107 mi² (277 km²).

PERIOD OF RECORD.--October 1974 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 4,455 ft (1,358 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. A few small diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--8 years, 12.0 ft³/s (0.340 m³/s), 8,690 acre-ft/yr (10.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107 ft³/s (3.03 m³/s) June 16, 1977, gage height, 7.54 ft (2.298 m); maximum gage height, 9.87 ft (3.008 m) Feb. 4, 1982 (backwater from ice); minimum daily discharge, 6.0 ft³/s (0.17 m³/s) July 17, 1981, May 23, 24, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21.0 ft³/s (0.59 m³/s) at 1245 hours, June 26, gage height, 6.73 ft (2.051 m), no peak above base of 50 ft³/s (1.42 m³/s); minimum daily discharge, 6.0 ft³/s (0.17 m³/s) May 23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	9.9	10	10	12	11	12	8.2	7.3	11	8.2	12
2	8.7	10	10	10	12	11	12	7.3	7.6	11	8.2	12
3	8.9	10	10	10	11	10	12	7.3	7.8	10	8.4	12
4	9.4	10	10	10	10	10	11	7.1	7.8	10	8.9	12
5	9.6	10	10	10	10	10	11	6.9	8.0	10	8.7	12
6	7.8	10	10	10	10	10	11	6.9	8.4	11	8.4	12
7	8.2	10	10	10	11	11	11	6.7	8.2	10	8.4	12
8	8.0	10	10	11	11	11	11	6.9	8.0	10	8.4	12
9	8.7	10	10	11	11	11	11	6.9	8.0	10	8.4	12
10	8.7	10	10	10	11	11	11	7.2	8.0	11	8.7	11
11	8.9	10	10	11	11	12	12	6.7	9.8	11	8.9	12
12	8.7	10	10	11	11	12	12	6.5	11	11	8.9	12
13	7.8	10	10	12	11	12	12	6.4	12	10	8.7	12
14	8.9	10	10	12	11	12	12	6.4	13	10	8.9	12
15	11	10	10	11	11	12	12	6.2	11	8.9	8.7	12
16	10	10	11	9.5	12	12	12	6.4	11	7.8	9.4	12
17	10	10	11	10	12	12	12	6.2	11	7.8	11	12
18	10	10	11	11	12	11	12	6.2	11	8.0	11	12
19	10	10	11	11	12	11	12	6.9	11	8.0	11	12
20	10	10	11	11	12	11	12	7.8	11	7.8	12	12
21	10	10	11	11	12	11	11	6.7	11	7.6	11	12
22	10	10	11	11	11	11	11	6.2	12	7.8	11	12
23	9.9	10	10	11	11	11	11	6.0	12	8.0	12	12
24	10	10	10	11	10	11	11	6.0	11	8.0	12	12
25	10	11	11	12	10	11	11	6.2	12	7.3	11	12
26	10	11	11	12	11	11	10	6.2	13	10	11	13
27	10	10	11	12	11	11	8.9	6.2	12	8.7	11	13
28	10	10	11	12	11	11	8.9	7.8	11	8.7	11	12
29	10	10	11	12	---	12	8.7	7.6	11	9.4	12	12
30	10	10	11	12	---	12	8.7	6.9	11	8.2	12	12
31	9.9	---	10	12	---	12	---	6.9	---	7.8	12	---
TOTAL	291.5	301.9	323	339.5	311	347	333.2	209.8	306.9	285.8	309.2	361
MEAN	9.40	10.1	10.4	11.0	11.1	11.2	11.1	6.77	10.2	9.22	9.97	12.0
MAX	11	11	11	12	12	12	12	8.2	13	11	12	13
MIN	7.8	9.9	10	9.5	10	10	8.7	6.0	7.3	7.3	8.2	11
AC-FT	578	599	641	673	617	688	661	416	609	567	613	716

CAL YR 1981 TOTAL 3624.2 MEAN 9.93 MAX 13 MIN 6.0 AC-FT 7190
WTR YR 1982 TOTAL 3719.8 MEAN 10.2 MAX 13 MIN 6.0 AC-FT 7380

06395000 CHEYENNE RIVER AT EDGEMONT, SD

LOCATION.--Lat 43°18'20", long 103°49'14", in SW¼SE¼SE¼ sec.36, T.8 S., R.2 E., Fall River County, Hydrologic Unit 10120106, on right bank at downstream side of bridge on U.S. Highway 18, at Edgemont, 300 ft (91 m) downstream from Burlington Northern Railroad bridge and 600 ft (183 m) upstream from Cottonwood Creek.

DRAINAGE AREA.--7,143 mi^2 (18,500 km^2).

PERIOD OF RECORD.--June 1903 to November 1906 (no winter records), April 1928 to February 1933, October 1946 to current year.

REVISED RECORDS.--WSP 1086: Drainage area. WSP 1116: 1947. WDR SD-78-1 1977.

GAGE.--Water-stage recorder. Datum of gage is 3,414.56 ft (1,040.758 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1906, nonrecording gage 20 ft (6 m) upstream at datum 0.7 ft (0.21 m) lower. Apr. 11, 1928, to Feb. 28, 1933, Oct. 4, 1946, to Oct. 23, 1947, and Jan. 11, 1961, to Apr. 24, 1963, nonrecording gage, and Oct. 24, 1947, to Jan. 10, 1961, and Apr. 25, 1963, to Sept. 30, 1972, water-stage recorder all at present site at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter period, which are poor. Many small reservoirs above station used for stock and irrigation water, total capacity, about 45,000 acre-ft (55.5 hm^3). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--40 years, 99.3 ft^3/s (2.812 m^3/s), 71,940 acre-ft/yr (88.7 hm^3/yr); median of yearly mean discharges, 76 ft^3/s (2.15 m^3/s), 55,100 acre-ft/yr (68 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft^3/s (793 m^3/s) May 20, 1978, gage height, 13.65 ft (4.161 m), present datum; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 1920, reached a stage of 13.0 ft (3.96 m) and May 1, 1922, 14.0 ft (4.27 m), present datum, from floodmarks at railroad bridge.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,160 ft^3/s (118 m^3/s) at 2130 hours, June 3, gage height, 6.72 ft (2.048 m), no other peak above base of 1,500 ft^3/s (42.5 m^3/s); no flow Oct. 1-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	11	11	5.0	5.0	330	50	8.9	106	130	153	50
2	.00	10	12	5.0	4.9	320	43	8.7	87	112	158	40
3	.00	11	12	4.5	4.5	310	43	7.7	1810	265	128	34
4	.00	11	11	5.0	4.5	300	43	7.7	1690	174	104	30
5	.78	11	11	3.5	4.3	300	40	7.7	919	107	90	29
6	.90	11	12	3.0	5.0	280	40	7.4	572	81	75	107
7	.71	11	13	3.5	6.0	270	40	7.2	367	71	292	108
8	.67	10	13	4.0	5.5	290	37	7.3	307	62	138	76
9	1.2	10	12	3.0	5.0	300	34	7.2	229	61	89	340
10	1.2	11	12	2.5	6.0	300	35	11	177	55	80	128
11	3.9	12	12	3.0	7.0	291	34	17	162	50	153	62
12	51	12	11	4.0	9.0	232	31	15	137	46	144	52
13	40	12	11	5.0	11	205	29	15	125	55	101	43
14	20	12	10	7.0	19	195	27	23	126	52	97	38
15	17	12	11	5.0	20	157	26	47	276	57	67	34
16	13	12	10	3.5	30	170	24	43	437	203	55	77
17	11	13	9.5	4.5	50	153	23	63	311	102	52	162
18	8.3	13	9.0	6.0	80	124	22	31	204	64	46	162
19	7.1	11	8.5	5.5	120	106	19	26	190	52	44	117
20	7.1	11	9.5	5.0	200	75	16	74	175	47	103	82
21	8.2	10	11	4.5	300	97	15	115	146	40	66	64
22	7.2	12	10	4.0	230	102	15	79	126	37	141	54
23	7.1	11	10	4.5	200	85	14	216	128	36	94	44
24	7.0	14	9.5	5.0	190	73	13	181	114	37	103	37
25	7.0	12	9.0	6.0	230	60	10	81	98	35	81	34
26	6.6	7.1	9.0	7.0	270	61	12	53	347	36	116	30
27	6.9	12	8.0	6.5	300	63	13	46	260	714	309	30
28	7.0	12	7.0	6.5	330	64	12	40	254	411	130	36
29	6.9	12	6.0	6.0	---	59	11	46	225	524	113	33
30	9.0	11	5.5	5.5	---	60	10	45	160	424	86	34
31	11	---	5.0	5.5	---	57	---	42	---	218	66	---
TOTAL	267.76	340.1	310.5	148.5	2646.7	5489	781	1398.8	10261	4360	3476	2167
MEAN	8.64	11.3	10.0	4.79	94.5	177	26.0	45.1	342	141	112	72.2
MAX	51	14	13	7.0	330	330	50	216	1810	714	309	340
MIN	.00	7.1	5.0	2.5	4.3	57	10	7.2	87	35	44	29
AC-FT	531	675	616	295	5250	10890	1550	2770	20350	8650	6890	4300

CAL YR 1981 TOTAL 14171.51 MEAN 38.8 MAX 1250 MIN .00 AC-FT 28110
WTR YR 1982 TOTAL 31646.36 MEAN 86.7 MAX 1810 MIN .00 AC-FT 62770

06400000 HAT CREEK NEAR EDGEMONT, SD

LOCATION.--Lat 43°14'24", long 103°35'16", in SW¼SE¼NE¼ sec.25, T.9 S., R.4 E., Fall River County, Hydrologic Unit 10120108, on right bank at upstream side of bridge on State Highway 71, 2.0 mi (3.2 km) upstream from mouth, 2.0 mi (3.2 km) west of Heppner, and 12.5 mi (20.1 km) southeast of Edgemont.

DRAINAGE AREA.--1,044 mi^2 (2,704 km^2).

PERIOD OF RECORD.--April 1905 to September 1906, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,295.71 ft (1,004.532 m) National Geodetic Vertical Datum of 1929. Nonrecording gage Apr. 8, 1905, to May 2, 1906, at site 0.6 mi (1.0 km) downstream and May 3 to July 7, 1906, at site 0.4 mi (0.6 km) upstream at different datum. Nov. 6, 1950, to May 1, 1951, and July 18 to Sept. 7, 1975, nonrecording gage and May 2, 1951, to July 17, 1975, recording gage, at site 0.4 mi (0.6 km) downstream at present datum.

REMARKS.--Records good. A few small diversions above station for irrigation. Lander ditch diverts water from Hat Creek 0.4 mi (0.6 km) upstream from gaging station for irrigating hay meadows downstream from station. Several observations of water temperature and specific conductance were made during the year. Results of discharge measurements, in cubic feet per second, of Lander ditch during water year 1982 are given herewith:

Oct. 5	0	Apr. 14	0	June 15	1.48
Dec. 2	0	May 4	0	July 7	0
Feb. 2	0	June 2	0	Aug. 3	.37
Feb. 22	5.16	June 14	20.6	Sept. 1	0
Mar. 16	0				

AVERAGE DISCHARGE.--33 years, 19.0 ft^3/s (0.538 m^3/s), 13,770 acre-ft/yr (17.0 hm^3/yr); median of yearly mean discharges, 12 ft^3/s (0.34 m^3/s), 8,700 acre-ft/yr (11 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft^3/s (377 m^3/s) June 16, 1967, gage height, 13.35 ft (4.069 m), from rating curve extended above 2,600 ft^3/s (73.6 m^3/s) on basis of slope-area measurement at 11.98 ft (3.652 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,180 ft^3/s (33.4 m^3/s) at 0245 hours, May 21, gage height, 13.71 ft (4.179 m), no other peak above base of 1,000 ft^3/s (28.3 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.29	.00	10	20	.53	4.7
2	.00	.00	.00	.00	.00	.00	.27	.00	11	19	.46	4.1
3	.00	.00	.00	.00	.00	.00	.25	.00	65	18	.36	3.4
4	.00	.00	.00	.00	.00	.00	.23	.00	316	13	.44	2.8
5	.00	.00	.00	.00	.00	.00	.21	.00	560	10	.54	2.6
6	.00	.00	.00	.00	.00	.00	.19	.00	462	8.9	.72	2.3
7	.00	.00	.00	.00	.00	.00	.17	.00	268	7.9	.82	8.5
8	.00	.00	.00	.00	.00	.00	.15	.00	125	6.0	.95	2.6
9	.00	.00	.00	.00	.00	.00	.13	.00	71	5.0	1.1	1.9
10	.00	.00	.00	.00	.00	.00	.11	.00	61	6.5	1.3	1.7
11	.00	.00	.00	.00	.00	.00	.09	.08	53	5.4	1.5	1.4
12	.00	.00	.00	.00	.00	.00	.07	.23	49	3.8	1.7	1.9
13	.00	.00	.00	.00	.00	.00	.05	.43	44	3.1	1.9	1.8
14	.00	.00	.00	.00	.00	.00	.03	24	615	7.5	2.1	3.8
15	.00	.00	.00	.00	.00	.00	.00	58	648	2.2	2.1	6.1
16	.00	.00	.00	.00	.00	.03	.00	257	582	1.3	2.3	6.3
17	.00	.00	.00	.00	.00	.13	.00	226	367	.43	2.4	7.1
18	.00	.00	.00	.00	.00	.11	.00	127	131	.65	2.9	4.4
19	.00	.00	.00	.00	.00	.18	.00	31	115	.41	80	2.6
20	.00	.00	.00	.00	.00	.23	.00	259	75	.28	43	1.4
21	.00	.00	.00	.00	.27	.17	.00	840	54	.64	183	.78
22	.00	.00	.00	.00	.00	.22	.00	355	42	.87	583	.55
23	.00	.00	.00	.00	.00	.24	.00	167	31	1.1	74	.30
24	.00	.00	.00	.00	.00	.31	.00	64	65	1.4	81	.45
25	.00	.00	.00	.00	.00	.37	.00	43	107	1.2	29	.41
26	.00	.00	.00	.00	.00	.39	.00	28	109	1.1	20	.40
27	.00	.00	.00	.00	.00	.39	.00	8.4	57	1.0	14	.39
28	.00	.00	.00	.00	.00	.41	.00	12	33	.84	11	.71
29	.00	.00	.00	.00	---	.41	.00	18	25	.72	7.9	.88
30	.00	.00	.00	.00	---	.50	.00	16	23	.66	6.6	2.1
31	.00	---	.00	.00	---	.32	---	13	---	.64	5.7	---
TOTAL	.00	.00	.00	.00	.27	4.41	2.24	2547.14	5174	149.54	1162.32	78.37
MEAN	.000	.000	.000	.000	.010	.14	.075	82.2	172	4.82	37.5	2.61
MAX	.00	.00	.00	.00	.27	.50	.29	840	648	20	583	8.5
MIN	.00	.00	.00	.00	.00	.00	.00	.00	10	.28	.36	.30
AC-FT	.00	.00	.00	.00	.5	8.7	4.4	5050	10260	297	2310	155

CAL YR 1981 TOTAL 100.10 MEAN .27 MAX 13 MIN .00 AC-FT 199
WTR YR 1982 TOTAL 9118.29 MEAN 25.0 MAX 840 MIN .00 AC-FT 18090

06400497 CASCADE SPRINGS NEAR HOT SPRINGS, SD

LOCATION.--Lat 43°20'10", long 103°33'07", in SE¼SW¼ sec.20, T.8 S., R.5 E., Fall River County, Hydrologic Unit 10120106, on right bank near upstream end of culvert on State Highway 71, 3.3 mi (5.3 km) upstream from mouth, and 8.5 mi (13.7 km) southwest of Hot Springs.

PERIOD OF RECORD.--July 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,440 ft (1,049 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--6 years, 19.8 ft³/s (0.561 m³/s) 14,350 acre-ft/yr (17.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49 ft³/s (1.39 m³/s) July 4, 1977, gage height, 6.25 ft (1.905 m); minimum daily, 16 ft³/s (0.45 m³/s) Mar. 16, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft³/s (0.88 m³/s) at 2400 hours, June 5, gage height, 5.48 ft (1.670 m); minimum daily, 18 ft³/s (0.51 m³/s) many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	19	18	18	18	18	18	21	20	22	25	20
2	20	19	18	18	18	18	18	21	20	22	25	20
3	20	19	18	18	18	18	19	21	20	22	25	20
4	20	19	18	18	18	18	19	21	20	22	25	20
5	20	19	18	18	18	18	19	21	21	22	24	20
6	20	19	18	18	18	18	19	21	21	22	24	20
7	20	19	18	18	18	18	19	21	21	22	24	20
8	20	19	18	18	18	18	19	21	21	22	24	21
9	20	19	18	18	18	18	19	21	21	22	24	21
10	20	20	18	18	18	18	19	21	21	22	24	21
11	20	20	18	18	18	18	19	21	21	22	23	20
12	20	20	18	18	18	18	19	21	21	22	23	21
13	20	20	18	18	18	18	19	21	21	23	23	21
14	20	20	18	18	18	18	19	21	21	23	23	21
15	20	19	18	18	18	18	19	21	21	23	23	21
16	20	19	18	18	19	18	19	21	21	23	23	21
17	20	19	18	18	19	18	19	21	21	23	22	21
18	20	19	18	18	19	18	20	21	21	23	22	21
19	20	19	18	18	19	18	20	21	21	24	22	21
20	20	19	18	18	19	18	20	21	21	23	22	21
21	20	19	18	18	19	18	20	21	21	24	22	21
22	20	19	18	18	19	18	20	21	22	24	22	21
23	20	19	18	18	19	18	20	21	21	24	22	21
24	20	19	18	18	19	18	20	21	21	24	21	21
25	20	19	18	18	19	18	20	21	21	24	21	21
26	20	19	18	18	18	18	20	21	21	24	21	21
27	20	19	18	18	18	18	20	21	22	25	21	21
28	20	18	18	18	18	19	20	21	22	25	21	21
29	19	18	18	18	---	19	20	20	22	25	20	21
30	19	18	18	18	---	19	20	20	22	25	20	21
31	19	---	18	18	---	18	---	20	---	25	20	---
TOTAL	617	572	558	558	514	561	581	648	631	718	701	622
MEAN	19.9	19.1	18.0	18.0	18.4	18.1	19.4	20.9	21.0	23.2	22.6	20.7
MAX	20	20	18	18	19	19	20	21	22	25	25	21
MIN	19	18	18	18	18	18	18	20	20	22	20	20
AC-FT	1220	1130	1110	1110	1020	1110	1150	1290	1250	1420	1390	1230

CAL YR 1981 TOTAL 6801 MEAN 18.6 MAX 20 MIN 16 AC-FT 13490
WTR YR 1982 TOTAL 7281 MEAN 19.9 MAX 25 MIN 18 AC-FT 14440

06400870 HORSEHEAD CREEK NEAR OELRICHS, SD

LOCATION.--Lat 43°06'57", long 103°13'42", in SW¼SW¼SW¼ sec.6, T.11 S., R.8 E., Fall River County, Hydrologic Unit 10120106, on right bank on downstream side of bridge on Highway 385, 1.6 mi (2.6 km) downstream from Beef Creek and 4.5 mi (7.2 km) south of Oelrichs.

DRAINAGE AREA.--108 mi^2 (280 km^2), approximately.

PERIOD OF RECORD.--October 1981 to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 3,390 ft (1,033 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 1,560 ft^3/s (44.2 m^3/s) at 1845 hours, May 20, gage height, 14.44 ft (4.401 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00	67
2	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00	2.6
3	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00	26
4	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.00	1.7
5	.00	.00	.00	.00	.00	.00	.00	.00	134	.00	.00	1.5
6	.00	.00	.00	.00	.00	.00	.00	.00	187	.00	.00	1.5
7	.00	.00	.00	.00	.00	.00	.00	.00	46	.00	.00	1.5
8	.00	.00	.00	.00	.00	.00	.00	.00	11	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	15	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	13	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	6.3	2.0	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	2.0	2.5	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	1.4	2.5	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	33	394	2.5	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	320	476	2.0	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	420	346	2.0	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	340	149	2.0	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	225	54	2.0	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	100	67	1.5	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	731	296	1.5	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	509	251	1.5	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	215	22	1.5	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	21	3.0	1.5	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	3.0	578	1.5	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	10	394	1.5	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	94	38	1.5	2.5	.00
27	.00	.00	.00	.00	.00	.00	.00	54	3.0	1.0	22	.00
28	.00	.00	.00	.00	.00	.00	.00	1.5	2.5	1.0	5.0	.00
29	.00	.00	.00	.00	---	.00	.00	1.5	2.5	1.0	3.0	.00
30	.00	.00	.00	.00	---	.00	.00	2.0	.00	1.0	4.8	.00
31	.00	---	.00	.00	---	.00	---	2.0	---	1.0	65	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	3082.00	3499.70	34.50	102.30	101.80
MEAN	.000	.000	.000	.000	.000	.000	.000	99.4	117	1.11	3.30	3.39
MAX	.00	.00	.00	.00	.00	.00	.00	731	578	2.5	65	67
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	6110	6940	68	203	202

WTR YR 1982 TOTAL 6820.30 MEAN 18.7 MAX 731 MIN .00 AC-FT 13530

06401000 ANGOSTURA RESERVOIR NEAR HOT SPRINGS, SD

LOCATION.--Lat 43°20'35", long 103°26'16", in SW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120106, at dam on Cheyenne River, 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi² (23,570 km²), approximately.

PERIOD OF RECORD.--October 1949 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Aug. 26, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by concrete gravity dam with earth embankment with gated concrete gravity spillway section. Storage began Oct. 3, 1949; dam completed December 1949. Conservation capacity, 82,443 acre-ft (102 hm³) between elevations 3,139.75 ft (956.996 m), invert of lowest outlet, and 3,187.2 ft (971.46 m), top of spillway gates. Dead storage below elevation 3,139.75 ft (956.996 m), 8,598 acre-ft (10.6 hm³). Figures given herein represent contents above elevation 3,139.75 ft (956.996 m). Water is stored for irrigation.

COOPERATION.--Records of elevations, contents, and diversion to Angostura project furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 145,200 acre-ft (179 hm³) June 18, 1962, elevation, 3,189.00 ft (972.007 m); minimum observed since normal operating level reached, 45,350 acre-ft (55.9 hm³) Sept. 28, 1960, elevation, 3,162.90 ft (964.052 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 122,170 acre-ft (151 hm³) June 25, elevation, 3,179.70 ft (969,173 m); minimum, 63,361 acre-ft (78.1 hm³) Oct. 1, elevation, 3,171.67 ft (966.725 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents	†Diversions
Sept. 30	3171.69	63361		
Oct. 31	3172.20	64920	+1559	
Nov. 30	3172.64	66283	+1363	
Dec. 31	3173.13	67820	+1537	
CAL YR 1981			-20268	
Jan. 31	3173.60	69314	+1494	
Feb. 28	3174.79	73180	+3866	
Mar. 31	3176.54	79112	+5932	
Apr. 30	3177.07	80974	+1862	
May 31	3181.56	97959	+16985	
June 30	3187.06	121525	+23566	785
July 31	3185.19	113149	-8376	12595
Aug. 31	3183.82	107267	-5882	14130
Sept. 30	3182.89	103378	-3889	8477
WTR YR 1982			+40017	

† Diversions from Angostura irrigation project.

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD

LOCATION.--Lat 43°20'42", long 103°26'12", in NE¼NW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120109, on right bank 800 ft (244 m) downstream from Angostura Dam, 4.8 mi (7.7 km) upstream from Fall River and 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi² (23,600 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year, seasonal records only beginning October 1978. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1946(M). WDR SD-78-1: 1962(M), 1967(M), 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 3,058.02 ft (932.084 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 17, 1946, nonrecording gage and Oct. 17, 1946, to July 7, 1953, water-stage recorder at site 4.8 mi (7.7 km) downstream at different datum.

REMARKS.--Records good. Flow regulated by Angostura Reservoir 800 ft (244 m) upstream since October 1949 (see station 06401000).

AVERAGE DISCHARGE.--33 years (water years 1945-78), 78.5 ft³/s (2.223 m³/s), 56,870 acre-ft/yr (70.1 hm³/yr); median of yearly mean discharges, 52 ft³/s (1.47 m³/s), 37,700 acre-ft/yr (46 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,300 ft³/s (858 m³/s) May 20, 1978, gage height, 15.97 ft (4.868 m), from rating curve extended above 12,000 ft³/s (340 m³/s); no flow Oct. 9, 1949, to Feb. 5, 1950, Apr. 28, Aug. 26, 30, 1951.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 1,320 ft³/s (37.4 m³/s) at 1945 hours, June 16, gage height, 6.07 ft (1.850 m); minimum daily, 1.6 ft³/s (0.045 m³/s) Feb. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					1.8	2.1	1.9	2.9	2.8	357	2.5	
2					2.4	2.5	2.1	2.9	3.0	193	2.6	
3					2.7	2.5	2.2	2.6	3.1	56	---	
4					2.4	2.5	2.2	3.0	2.7	43	---	
5					2.5	2.4	2.3	3.1	5.0	230	---	
6					2.0	2.4	2.3	3.2	11	274	---	
7					2.0	2.4	2.9	2.9	4.7	92	---	
8					2.2	2.4	3.1	2.9	4.4	4.1	---	
9					2.5	2.3	3.0	2.4	5.3	3.3	---	
10					2.2	2.2	2.8	2.7	5.2	3.2	---	
11					2.1	2.2	2.5	3.2	7.5	2.9	---	
12					2.0	2.1	2.4	2.8	4.2	2.7	---	
13					1.8	2.2	2.6	2.8	3.6	2.5	---	
14					2.0	2.2	2.5	3.2	3.7	2.4	---	
15					1.8	2.2	2.7	2.9	33	2.3	---	
16					1.8	2.3	3.0	2.9	798	1.8	---	
17					1.8	2.2	2.9	2.8	1250	2.2	---	
18					2.0	2.6	2.8	2.6	698	2.0	---	
19					1.8	2.5	3.0	2.8	463	1.9	---	
20					1.6	2.6	3.0	2.9	488	1.8	---	
21					1.6	2.5	2.9	2.9	445	2.1	---	
22					1.9	2.4	2.7	2.9	357	2.5	---	
23					2.0	2.4	2.6	2.7	223	2.3	---	
24					2.2	2.6	2.9	2.7	117	1.8	---	
25					2.2	2.5	3.2	2.6	353	2.4	---	
26					2.2	2.4	3.3	2.6	632	2.1	---	
27					2.2	2.3	3.3	2.3	806	1.7	---	
28					2.2	2.1	3.0	2.3	693	2.2	---	
29					---	2.0	3.3	2.3	496	2.4	---	
30					---	2.0	3.1	2.3	433	2.4	---	
31					---	1.9	---	2.3	---	2.2	---	
TOTAL					57.8	72.0	82.5	85.4	8350.8	1302.2	---	
MEAN					2.06	2.32	2.75	2.75	278	42.0	---	
MAX					2.7	2.6	3.3	3.2	1250	357	---	
MIN					1.6	1.9	1.9	2.3	2.8	1.7	---	
AC-FT					115	143	164	169	16560	2580	---	

06402000 FALL RIVER AT HOT SPRINGS, SD

LOCATION.--Lat 43°25'50", long 103°28'33", in NW¼NW¼ sec.24, T.7 S., R.5 E., Fall River County, Hydrologic Unit 10120109, on left bank at intersection of River Street and University Avenue in Hot Springs and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--137 mi^2 (355 km^2).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October 1937, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1938, 1941(M), 1947(M). WSP 1729: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is 3,413.20 ft (1,040.343 m) National Geodetic Vertical Datum of 1929. Prior to June 2, 1939, nonrecording gage at site 300 ft (91 m) upstream at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records good except those for period of no gage-height record, June 8 to Sept. 30, which are poor. Flow regulated by Coldbrook Reservoir, capacity, 7,200 acre-ft (8.88 hm^3), beginning September 1952, and Cottonwood Springs Lake, capacity, 8,385 acre-ft (10.3 hm^3) since June 1969. Some diversion above station for municipal supply of Hot Springs. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--45 years, 25.0 ft^3/s (0.708 m^3/s), 18,110 acre-ft/yr (22.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft^3/s (371 m^3/s) Sept. 4, 1938, gage height, 18.4 ft (5.61 m), site and datum then in use, from rating curve extended above 51 ft^3/s (1.44 m^3/s) on basis of weir formula and slope-area measurement of peak flow; minimum, 4.0 ft^3/s (0.11 m^3/s) Sept. 23, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 237 ft^3/s (6.71 m^3/s) at 1845 hours, May 19, gage height, 2.97 ft (0.905 m); minimum daily, 14 ft^3/s (0.40 m^3/s) May 2, 3, 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	23	23	20	23	22	20	17	22	20	19	22
2	18	23	23	20	23	22	22	14	29	24	20	22
3	18	23	22	20	23	22	20	14	23	22	20	22
4	20	22	22	20	23	22	22	17	20	21	19	21
5	23	22	22	20	22	22	20	17	25	20	18	20
6	22	20	22	20	23	22	22	17	25	20	20	21
7	20	20	22	20	23	20	23	17	23	20	20	23
8	20	22	22	22	22	18	22	14	23	20	21	22
9	22	23	22	22	22	18	20	14	22	21	20	21
10	22	23	20	18	20	18	20	20	22	20	21	21
11	26	22	20	20	20	20	20	20	22	20	19	22
12	23	22	20	20	20	18	20	17	21	19	19	30
13	27	22	20	20	20	18	20	18	21	20	19	28
14	25	20	20	20	25	20	20	35	24	20	20	37
15	25	20	20	20	22	20	20	31	25	19	22	31
16	23	20	20	20	20	20	18	27	23	19	22	25
17	23	18	20	22	20	23	18	22	26	19	20	27
18	25	17	22	22	20	20	18	22	22	19	24	25
19	25	18	22	23	20	22	20	42	22	19	24	23
20	23	18	22	23	20	22	22	33	21	19	23	20
21	23	18	22	22	20	20	18	25	21	19	22	18
22	23	18	22	23	20	20	17	23	21	19	25	19
23	23	20	22	23	20	20	18	23	22	21	30	18
24	23	22	20	22	20	22	17	22	21	20	35	18
25	23	22	20	22	20	20	20	23	21	20	27	18
26	23	22	20	23	22	20	20	23	21	24	21	20
27	23	22	20	25	22	18	18	22	20	21	22	20
28	23	23	20	23	22	18	17	26	20	20	24	29
29	23	23	20	23	---	18	20	22	20	19	27	31
30	23	23	20	23	---	18	20	22	20	19	25	28
31	23	---	20	23	---	18	---	22	---	19	23	---
TOTAL	703	631	652	664	597	621	592	681	668	622	691	702
MEAN	22.7	21.0	21.0	21.4	21.3	20.0	19.7	22.0	22.3	20.1	22.3	23.4
MAX	27	23	23	25	25	23	23	42	29	24	35	37
MIN	18	17	20	18	20	18	17	14	20	19	18	18
AC-FT	1390	1250	1290	1320	1180	1230	1170	1350	1320	1230	1370	1390

CAL YR 1981 TOTAL 7619 MEAN 20.9 MAX 28 MIN 16 AC-FT 15110
WTR YR 1982 TOTAL 7824 MEAN 21.4 MAX 42 MIN 14 AC-FT 15520

06402500 BEAVER CREEK NEAR BUFFALO GAP, SD

LOCATION.--Lat 43°27'56", long 103°18'22", in SE¼SE¼ sec.5, T.7 S., R.7 E., Fall River County, Hydrologic Unit 10120109, on left bank 1.5 mi (2.4 km) south of Buffalo Gap and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--130 mi^2 (340 km^2), approximately.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October, November, 1937, published in WSP 1309.

REVISED RECORDS.--WSP 956: 1941. WSP 1309: 1939-40(M), 1947(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,150 ft (960 m), from topographic map. Prior to June 20, 1939, nonrecording gage at site 0.8 mi (1.3 km) downstream at different datum.

REMARKS.--Records good except those for January and February, which are poor. Nearly all flow is diverted above station during irrigation season. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--45 years, 7.05 ft^3/s (0.200 m^3/s), 5,110 acre-ft/yr (6.30 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft^3/s (331 m^3/s) Sept. 4, 1938, gage height, 16.46 ft (5.017 m), site and datum then in use, from rating curve extended above 11 ft^3/s (0.31 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1927 reached a stage of 18.0 ft (5.49 m), former site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19 ft^3/s (0.54 m^3/s) at 1700 hours, May 20, gage height, 4.62 ft (1.408 m), no peak above base of 24 ft^3/s (0.68 m^3/s); minimum daily discharge, 0.62 ft^3/s (0.018 m^3/s) July 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	8.3	10	11	11	11	8.3	1.3	10	11	6.2	7.9
2	1.4	8.3	10	11	11	11	8.4	1.3	12	11	6.0	7.8
3	2.3	8.5	10	10	9.8	11	8.6	1.2	14	11	7.6	7.9
4	2.8	8.5	11	9.5	9.6	11	8.9	1.1	14	11	7.8	8.0
5	1.6	8.6	11	9.8	9.4	11	8.8	1.0	13	11	7.6	8.0
6	1.4	8.5	11	9.2	9.6	11	8.5	.99	15	11	7.6	8.3
7	2.6	8.6	11	9.6	9.8	11	8.6	1.1	14	11	7.3	8.1
8	5.9	8.7	11	9.4	10	11	8.5	1.2	13	11	7.5	8.1
9	6.8	8.8	11	9.0	10	11	8.5	1.3	12	11	7.6	8.1
10	7.0	8.9	11	8.6	11	11	8.5	1.4	12	11	8.1	7.8
11	7.0	8.9	11	9.0	10	11	8.5	2.6	13	11	8.4	8.0
12	4.6	9.1	11	9.2	10	11	8.4	4.4	12	10	8.1	8.8
13	1.9	9.0	11	9.4	10	11	8.5	5.3	12	11	7.9	8.7
14	3.0	9.1	11	9.5	11	11	8.4	7.3	12	10	8.1	9.2
15	6.6	9.2	11	9.4	12	11	8.2	11	13	10	8.1	9.1
16	7.3	9.1	12	9.2	12	11	8.2	12	12	8.7	8.2	8.9
17	7.5	9.2	12	9.0	13	11	8.1	13	12	1.6	8.4	8.8
18	7.4	9.2	11	9.4	12	12	8.1	11	13	1.0	9.0	8.5
19	7.4	9.4	12	9.6	12	12	7.9	11	12	.83	8.5	8.4
20	7.5	9.4	12	9.8	12	12	5.0	16	12	.71	8.5	8.5
21	7.6	9.3	12	10	11	11	2.1	14	12	.62	8.4	8.6
22	7.8	9.5	12	10	11	11	1.8	11	11	.63	8.2	8.6
23	7.8	9.4	11	9.6	11	11	1.7	11	11	2.7	8.3	8.7
24	8.1	9.6	11	9.2	11	11	1.6	11	11	4.7	8.3	8.6
25	8.0	9.7	11	9.4	11	11	1.6	11	11	5.2	7.9	8.7
26	8.0	9.7	11	9.8	11	11	1.5	11	11	6.2	8.0	8.8
27	8.1	9.8	11	10	11	10	1.5	11	11	4.9	8.3	8.9
28	8.2	9.9	11	11	11	10	1.4	11	11	4.9	8.3	10
29	8.2	10	12	12	---	10	1.3	11	11	5.2	8.5	9.3
30	8.2	10	12	11	---	8.6	1.3	11	11	5.3	8.1	9.8
31	8.3	---	11	11	---	8.2	---	11	---	5.6	7.9	---
TOTAL	181.5	274.2	346	303.6	303.2	335.8	180.7	229.49	363	220.79	246.7	256.9
MEAN	5.85	9.14	11.2	9.79	10.8	10.8	6.02	7.40	12.1	7.12	7.96	8.56
MAX	8.3	10	12	12	13	12	8.9	16	15	11	9.0	10
MIN	1.2	8.3	10	8.6	9.4	8.2	1.3	.99	10	.62	6.0	7.8
AC-FT	360	544	686	602	601	666	358	455	720	438	489	510

CAL YR 1981 TOTAL 2437.76 MEAN 6.68 MAX 13 MIN .31 AC-FT 4840
WTR YR 1982 TOTAL 3241.88 MEAN 8.88 MAX 16 MIN .62 AC-FT 6430

06403300 FRENCH CREEK ABOVE FAIRBURN, SD

LOCATION.--Lat 43°43'02", long 103°22'03", in SW¼SW¼NE¼ sec.11, T.4 S., R.6 E., Custer County, Hydrologic Unit 10120109, on right bank 500 ft (156 m) upstream from concrete diversion dam, 1.0 mi (2 km) southwest of landing strip in Custer State Park, 1.5 mi (2 km) west of east boundary of Custer State Park, 2.6 mi (4 km) southwest of abandoned Fairview School, and 3.5 mi (7 km) southeast of Custer State Park Headquarters.

DRAINAGE AREA.--105 mi^2 (272 km^2), approximately.

PERIOD OF RECORD.--April to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 3,850 ft (1,173 m), from topographic map.

REMARKS.--Records good. Flow regulated by Stockade Reservoir, capacity, 1,820 acre-ft (2.24 hm^3), 21 mi (57 km) upstream. Several observations of water temperature and specific conductance were made.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period April to September, 194 ft^3/s (5.49 m^3/s) at 0615 hours, June 24, gage height, 2.21 ft (0.674 m); minimum daily, 1.5 ft^3/s (0.042 m^3) Apr. 25-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							2.1	1.9	20	42	15	7.8
2							2.2	2.7	25	38	12	6.6
3							2.1	2.9	71	33	10	5.5
4							2.2	2.9	87	29	9.5	7.1
5							2.3	3.0	71	26	8.6	7.6
6							2.4	3.1	58	24	7.8	11
7							2.7	2.8	45	26	7.1	20
8							2.9	2.6	40	22	6.7	14
9							3.1	2.4	34	19	6.1	15
10							3.3	3.1	28	20	5.9	19
11							3.5	3.7	27	21	6.1	19
12							3.6	6.0	28	18	6.5	20
13							3.4	5.6	35	17	6.3	20
14							3.0	9.1	38	16	5.9	22
15							2.6	22	69	17	5.8	23
16							2.3	24	63	23	5.6	21
17							2.1	25	48	16	4.9	21
18							2.0	22	49	13	4.4	19
19							1.9	17	45	10	5.8	19
20							1.8	72	36	8.7	6.1	18
21							1.7	75	33	7.7	6.3	18
22							1.6	50	40	7.1	5.7	18
23							1.6	36	38	7.6	5.4	18
24							1.6	26	141	6.8	6.0	18
25							1.5	21	100	6.9	8.5	18
26							1.5	18	79	17	7.7	18
27							1.5	16	82	23	9.1	21
28							1.6	15	67	25	18	21
29							1.6	42	54	31	15	19
30							1.7	35	47	32	12	20
31							---	24	---	21	9.1	---
TOTAL							67.4	591.8	1598	623.8	249.1	504.6
MEAN							2.25	19.1	53.3	20.1	8.04	16.8
MAX							3.6	75	141	42	18	23
MIN							1.5	1.9	20	6.8	4.4	5.5
AC-FT							134	1170	3170	1240	494	1000

06404000 BATTLE CREEK NEAR KEYSTONE, SD

LOCATION.--Lat 43°52'21", long 103°20'10", in SW¼SW¼ sec.18, T.2 S., R.7 E., Pennington County, Hydrologic Unit 10120109, at right downstream end county highway bridge, 0.6 mi (1.0 km) downstream from Iron Creek and 4.5 mi (7.2 km) southeast of Keystone.

DRAINAGE AREA.--66 mi² (171 km²).

PERIOD OF RECORD.--July 1945 to July 1947, October 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,800 ft (1,160 m), from topographic map. Prior to Nov. 13, 1961, nonrecording gage at site 250 ft (76 m) downstream at different datum and Nov. 13 to Dec. 5, 1961, at same site at present datum. Dec. 6, 1961, to June 9, 1972, water-stage recorder at site 210 ft (64 m) downstream at present datum (destroyed by flood); June 10 to Nov. 20, 1972, nonrecording gage 180 ft (55 m) downstream at present datum; Nov. 21, 1972, to Nov. 27, 1973, water-stage recorder at present site and datum; Nov. 28, 1973, to Nov. 7, 1974, nonrecording gage 180 ft (55 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--22 years (water years 1946, 1962-82), 9.43 ft³/s (0.267 m³/s), 6,830 acre-ft/yr (8.42 hm³/yr); median of yearly mean discharges, 7.4 ft³/s (0.21 m³/s), 5,400 acre-ft/yr (6.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 ft³/s (742 m³/s) June 9, 1972, gage height, 14.5 ft (4.42 m), from floodmarks, site then in use, from rating curve extended above 550 ft³/s (15.6 m³/s) on basis of slope-area measurement of peak flow; no flow for many days in 1961, 1962, 1970, 1974, 1976, 1980, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 101 ft³/s (2.86 m³/s) at 2200 hours, June 4, gage height, 4.22 ft (1.286 m), no other peak above base of 100 ft³/s (2.83 m³/s); no flow Oct. 1-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.1	.82	.50	.70	2.0	3.8	2.6	12	21	3.5	1.2
2	.00	1.1	.81	.50	.70	2.0	3.7	2.4	20	21	3.3	.93
3	.00	1.1	.93	.50	.68	1.9	3.2	2.4	66	17	3.5	.81
4	.00	1.1	.74	.55	.65	1.8	2.9	2.5	63	13	3.3	.81
5	1.1	1.1	.76	.50	.62	1.8	2.9	2.4	66	12	2.7	1.1
6	1.1	1.1	1.1	.40	.65	1.8	2.9	2.2	45	13	2.7	2.2
7	.81	1.1	1.3	.45	.70	1.9	3.0	2.1	33	12	4.1	2.1
8	.54	1.1	1.1	.45	.65	2.0	2.9	2.1	29	11	3.6	1.6
9	.76	1.1	1.1	.40	.62	2.4	2.6	1.9	25	9.0	3.0	1.2
10	.66	1.1	1.2	.30	.80	2.8	3.3	3.4	23	7.9	3.0	.93
11	.77	.93	1.2	.35	1.0	3.6	4.2	4.1	24	7.3	2.9	.70
12	6.7	1.1	.96	.40	1.1	3.3	6.5	4.1	20	7.1	2.6	1.1
13	4.8	1.1	.81	.45	1.1	3.6	7.3	4.9	22	6.3	2.2	1.2
14	3.1	1.1	.70	.50	1.2	3.0	6.5	24	31	6.3	2.1	2.2
15	2.5	1.1	.65	.45	1.2	3.3	5.4	43	38	7.8	1.8	5.1
16	2.1	1.1	.60	.35	1.2	3.2	4.6	43	43	8.4	1.6	4.1
17	1.6	1.1	.60	.40	1.5	3.6	4.1	33	44	5.4	2.1	3.0
18	1.3	1.1	.55	.50	1.8	3.4	3.8	36	40	4.5	1.8	2.6
19	1.2	1.1	.50	.48	2.2	3.3	3.4	29	34	4.2	3.6	2.2
20	1.2	.93	.60	.45	2.5	2.7	3.7	57	29	3.4	3.2	1.8
21	1.1	1.1	.70	.44	2.8	3.7	3.6	63	26	3.1	2.7	1.6
22	1.1	1.2	.65	.42	2.5	3.5	3.4	42	26	2.8	2.2	1.5
23	1.1	1.2	.60	.40	2.2	3.3	3.0	34	23	2.8	2.1	1.3
24	1.1	1.1	.60	.50	1.9	2.7	2.8	41	26	2.8	1.9	1.3
25	1.1	1.1	.65	.60	1.9	2.7	2.7	30	27	12	1.8	1.2
26	1.1	.93	.60	.80	2.0	2.3	2.7	24	26	14	1.6	1.2
27	1.2	.81	.60	.75	1.9	2.6	2.9	19	27	8.5	1.5	1.3
28	1.2	.82	.55	.70	1.9	3.4	2.9	19	22	5.9	1.3	2.9
29	1.2	.81	.52	.70	---	4.5	2.8	20	23	5.3	1.9	2.9
30	1.2	.81	.55	.70	---	5.6	2.8	16	23	4.8	1.8	3.0
31	1.2	---	.50	.70	---	4.1	---	14	---	4.0	1.6	---
TOTAL	42.84	31.54	23.55	15.59	38.67	91.8	110.3	624.1	956	263.6	77.0	55.08
MEAN	1.38	1.05	.76	.50	1.38	2.96	3.68	20.1	31.9	8.50	2.48	1.84
MAX	6.7	1.2	1.3	.80	2.8	5.6	7.3	63	66	21	4.1	5.1
MIN	.00	.81	.50	.30	.62	1.8	2.6	1.9	12	2.8	1.3	.70
AC-FT	85	63	47	31	77	182	219	1240	1900	523	153	109

CAL YR 1981 TOTAL 2045.07 MEAN 5.60 MAX 364 MIN .00 AC-FT 4060
WTR YR 1982 TOTAL 2330.07 MEAN 6.38 MAX 66 MIN .00 AC-FT 4620

06404998 GRACE COOLIDGE CREEK NEAR GAME LODGE, NEAR CUSTER, SD

LOCATION.--Lat 43°45'40", long 103°21'49", in SW¼NE¼ sec.26, T.3 S., R.6 E., Custer County, Hydrologic Unit 10120109, on right bank 0.3 mi (0.5 km) downstream from bridge on U.S. Highway 16A, 0.9 mi (1.5 km) east of Game Lodge, 1.5 mi (2.4 km) southwest of junction of State Highway 36 and U.S. Highway 16A, and 11.5 mi (18.5 km) east of Custer.

DRAINAGE AREA.--25.2 mi² (65.3 km²).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,100 ft (1,250 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Considerable losses in sinkholes downstream from gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--6 years, 3.38 ft³/s (0.096 m³/s), 2,450 acre-ft/yr (3.02 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 370 ft³/s (10.5 m³/s) May 18, 1981, gage height, 9.49 ft (2.893 m); maximum gage height, 12.76 ft (3.889 m) Feb. 9, 1979 (backwater from ice); no flow June 5-9, July 6, 8, 11, 19, 1977, for part of June 14, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1972, reached a stage of 10.35 ft (3.155 m), from floodmarks, discharge, 709 ft³/s (20.1 m³/s) from slope-area measurement of peak flow.

Flood of June 15, 1976, reached a stage of 10.90 ft (3.322 m), from floodmarks, discharge, 980 ft³/s (27.8 m³/s) on basis of slope-area measurement of 10.35 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft³/s (0.71 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 23	1630	31	0.878	7.85	2.393
June 17	1600	31	.878	7.86	2.396
June 3	2300	*41	1.161	*7.98	2.432

Minimum daily discharge, 0.68 ft³/s (0.019 m³/s) Feb. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.6	1.1	1.1	.95	.95	1.4	1.8	7.4	13	3.4	2.2
2	1.0	1.6	1.1	1.1	.95	.95	1.4	1.2	13	12	3.3	2.1
3	1.1	1.6	1.1	1.1	1.0	.95	1.6	1.0	31	10	3.1	2.1
4	1.1	1.6	1.2	1.0	1.0	1.0	1.5	1.0	39	9.0	3.1	2.0
5	1.4	1.6	1.2	1.0	1.0	1.1	1.4	1.1	37	6.4	3.0	2.2
6	1.3	1.5	1.3	1.1	1.0	1.1	1.4	1.0	31	8.2	2.8	4.4
7	1.2	1.5	1.4	1.1	1.0	1.1	1.4	1.0	25	7.7	2.7	4.1
8	1.2	1.5	1.4	1.0	1.0	1.1	1.4	1.1	22	6.7	2.7	3.4
9	1.3	1.5	1.4	.90	1.0	1.2	1.4	1.1	18	7.4	2.7	3.1
10	1.3	1.5	1.4	.80	1.0	1.2	1.4	1.3	16	7.4	3.0	2.9
11	1.4	1.6	1.4	.85	1.0	1.1	2.0	1.3	16	7.2	2.9	2.8
12	3.0	1.6	1.3	.90	1.0	1.2	2.4	1.4	15	7.9	2.8	2.6
13	2.2	1.6	1.3	.95	1.0	1.1	2.3	1.8	14	6.1	2.4	2.6
14	2.2	1.6	1.3	.95	1.1	1.1	2.3	6.2	19	4.9	2.3	4.3
15	2.1	1.6	1.3	.80	.68	1.0	2.1	10	25	8.2	2.3	6.5
16	2.0	1.6	1.2	.70	.85	1.0	2.1	8.7	23	7.7	2.2	4.8
17	1.9	1.6	1.1	.80	.90	1.0	2.0	7.7	27	5.9	2.0	4.1
18	2.3	1.6	1.1	.85	.95	1.4	1.7	7.9	29	4.9	2.0	3.7
19	1.9	1.6	1.1	.85	1.0	1.4	1.8	6.3	25	4.4	2.2	3.3
20	1.7	1.6	1.2	.90	.95	1.4	2.1	16	21	4.0	2.2	3.0
21	1.6	1.5	1.3	.85	.95	1.4	1.7	19	19	4.0	2.1	2.9
22	1.6	1.5	1.3	.80	.95	1.4	1.6	16	17	3.8	2.0	2.8
23	1.6	1.5	1.3	.80	.85	1.4	1.5	16	17	3.7	2.0	2.7
24	1.7	1.4	1.3	.85	.78	1.4	1.8	14	22	3.5	2.1	2.6
25	1.9	1.4	1.2	.90	.85	1.4	1.4	12	23	4.8	1.9	2.6
26	2.0	1.3	1.2	.95	.85	1.4	1.4	11	21	9.8	1.9	2.6
27	1.9	1.2	1.2	1.0	.85	1.4	1.4	9.5	19	6.3	2.2	3.0
28	1.9	1.1	1.1	1.0	.85	1.4	1.4	10	16	4.6	2.2	4.4
29	1.7	1.1	1.1	.95	---	1.6	1.4	11	14	4.9	2.9	4.1
30	1.7	1.0	1.1	.95	---	2.3	1.4	8.7	14	4.1	2.6	3.8
31	1.6	---	1.1	.95	---	1.7	---	7.9	---	3.7	2.3	---
TOTAL	51.9	44.5	38.1	28.75	26.26	39.15	49.7	213.7	635.4	204.4	77.3	98.1
MEAN	1.67	1.48	1.23	.93	.94	1.26	1.66	6.89	21.2	6.59	2.49	3.27
MAX	3.0	1.6	1.4	1.1	1.1	2.3	2.4	19	39	13	3.4	6.5
MIN	1.0	1.0	1.1	.70	.68	.95	1.4	1.0	7.4	3.5	1.9	2.0
AC-FT	103	88	76	57	52	78	99	424	1260	405	153	195

CAL YR 1981 TOTAL 1444.39 MEAN 3.96 MAX 232 MIN .40 AC-FT 2860
WTR YR 1982 TOTAL 1507.16 MEAN 4.13 MAX 39 MIN .68 AC-FT 2990

06406000 BATTLE CREEK AT HERMOSA, SD

LOCATION.--Lat 43°49'41", long 103°11'44", in NE¼SW¼SW¼ sec.32, T.2 S., R.8 E., Custer County, Hydrologic Unit 10120109, on right bank 50 ft (15 m) downstream from Chicago and North Western Transportation Company bridge, 0.8 mi (1.3 km) south of Hermosa and 2.9 mi (4.7 km) downstream from Grace Coolidge Creek.

DRAINAGE AREA.--178 mi² (461 km²).

PERIOD OF RECORD.--August to December 1903 (gage heights only), July 1949 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,290 ft (1,000 m), from topographic map. Nonrecording gage, August to December 1903, at site 50 ft (15 m) upstream, July 7, 1949, to Nov. 2, 1950, at site 0.5 mi (0.8 km) upstream, Nov. 3, 1950, to Dec. 6, 1961, at site 170 ft (52 m) downstream, all at different datum. Dec. 7, 1961, to June 10, 1972, water-stage recorder (destroyed by flood), and June 11, 1972, to Aug. 28, 1972, nonrecording gage at site 80 ft (24 m) downstream at present datum.

REMARKS.--Records good except those for period of no gage-height record, June 5 to June 14, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--33 years, 9.13 ft³/s (0.259 m³/s), 6,610 acre-ft/yr (8.15 hm³/yr); median of yearly mean discharges, 6.2 ft³/s (0.18 m³/s), 4,500 acre-ft/yr (5.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft³/s (606 m³/s) June 10, 1972, gage height, 17.72 ft (5.401 m), from floodmarks, from rating curve extended above 2,800 ft³/s (79.3 m³/s) on basis of contracted-opening and flow-over-railroad embankment measurement of peak flow; no flow at times in 1954-57, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 58 ft³/s (1.64 m³/s) at 0630 hours, June 5, gage height, 3.45 ft (1.052 m), no peak above base of 150 ft³/s (4.25 m³/s); minimum daily discharge, 1.4 ft³/s (0.040 m³/s) Feb. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	3.8	2.7	2.9	3.2	1.8	2.9	3.0	6.9	17	8.6	8.4
2	3.2	4.0	2.7	3.0	2.8	1.9	2.7	3.0	7.0	16	8.6	8.7
3	3.0	3.9	2.8	3.0	2.8	2.0	2.5	2.8	23	12	9.3	8.2
4	2.0	4.0	2.7	2.9	3.0	2.1	2.6	2.8	45	10	9.7	7.2
5	2.4	3.3	2.7	3.0	2.9	2.2	3.0	2.5	44	10	11	7.0
6	2.2	3.1	3.0	3.1	2.4	2.2	3.0	2.8	35	11	8.4	8.2
7	2.2	3.0	2.5	3.2	2.5	2.3	3.6	2.4	27	10	11	8.0
8	2.1	2.9	2.6	3.3	2.5	2.4	3.5	2.0	22	9.4	8.0	6.8
9	2.2	2.8	2.7	3.3	1.7	2.5	3.5	2.0	20	9.0	8.7	6.5
10	2.5	2.7	2.7	2.9	2.3	2.7	3.5	3.6	20	9.4	12	6.5
11	2.7	2.7	2.7	3.0	2.3	2.4	3.6	3.1	18	8.8	12	5.9
12	4.3	2.6	2.5	3.0	2.3	2.5	3.4	2.4	17	8.6	11	6.5
13	2.0	2.5	2.8	3.0	2.7	2.6	3.4	3.6	18	8.4	11	7.0
14	2.0	2.4	3.0	3.2	6.6	2.7	2.9	4.8	23	5.8	13	7.5
15	1.9	2.5	3.1	3.1	9.7	2.6	3.0	4.9	32	10	11	8.4
16	2.3	2.4	3.1	2.2	5.3	2.7	2.7	4.7	40	9.0	10	7.7
17	2.2	2.7	3.0	3.3	3.9	3.4	2.4	5.3	35	7.8	12	7.5
18	2.4	2.8	3.0	3.4	2.3	3.1	3.0	5.6	26	7.6	14	7.2
19	2.9	2.7	2.9	3.2	1.8	3.3	3.2	6.6	24	8.1	10	6.1
20	3.0	2.6	3.2	3.0	1.5	3.2	3.3	6.4	22	7.2	9.5	6.3
21	3.3	2.6	3.4	2.9	1.4	3.2	3.3	39	20	7.6	9.5	6.5
22	3.3	2.6	3.2	2.8	1.7	3.1	3.3	34	20	8.4	9.8	6.5
23	3.4	2.8	3.2	2.7	1.4	2.9	3.2	22	18	8.4	10	6.3
24	3.6	2.7	3.2	2.9	1.5	3.0	3.2	25	20	8.8	9.8	6.5
25	3.7	2.7	3.2	3.2	1.6	2.9	3.5	21	22	13	9.2	6.5
26	3.9	2.8	3.2	4.0	1.6	3.4	3.7	15	24	12	9.2	5.9
27	4.2	2.8	3.2	6.0	2.0	3.3	3.3	12	21	11	8.4	5.2
28	3.9	2.8	3.1	5.5	2.0	3.2	3.5	9.6	20	10	9.0	10
29	3.9	2.7	2.8	4.2	---	3.4	3.7	10	20	10	9.2	7.7
30	3.9	2.7	2.8	3.5	---	3.9	3.5	9.6	19	9.9	9.2	8.0
31	3.7	---	2.8	3.1	---	3.1	---	7.9	---	8.8	9.0	---
TOTAL	91.5	86.6	90.5	101.8	77.7	86.0	95.9	279.4	708.9	306.0	311.1	214.7
MEAN	2.95	2.89	2.92	3.28	2.78	2.77	3.20	9.01	23.6	9.87	10.0	7.16
MAX	4.3	4.0	3.4	6.0	9.7	3.9	3.7	39	45	17	14	10
MIN	1.9	2.4	2.5	2.2	1.4	1.8	2.4	2.0	6.9	7.2	8.0	5.2
AC-FT	181	172	180	202	154	171	190	554	1410	607	617	426

CAL YR 1981 TOTAL 2113.70 MEAN 5.79 MAX 503 MIN .02 AC-FT 4190
WTR YR 1982 TOTAL 2450.10 MEAN 6.71 MAX 45 MIN 1.4 AC-FT 4860

06408500 SPRING CREEK NEAR HERMOSA, SD

LOCATION.--Lat 43°56'31", long 103°09'32", in SE¼SE¼SE¼ sec.21, T.1 S., R.8 E., Pennington County, Hydrologic Unit 10120109, at left upstream end of county highway bridge, 0.3 mi (0.5 km) upstream from Chicago and North Western Transportation Company bridge and 7.5 mi (12.1 km) north of Hermosa.

DRAINAGE AREA.--199 mi^2 (515 km^2).

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 1729: 1950.

GAGE.--Water-stage recorder. Datum of gage is 3,265.30 ft (995.263 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 30, 1973, nonrecording gage and crest-stage gage 210 ft (64.0 m) upstream, and Mar. 30 to Sept. 30, 1973, water-stage recorder at present site, both at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records poor. Considerable loss in sinkholes in reach 10 to 15 mi (16 to 24 km) above station. Flow slightly regulated by Lake Sheridan, capacity, 12,657 acre-ft (15.6 hm^3), 24 mi (39 km) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--33 years, 5.14 ft^3/s (0.146 m^3/s), 3,720 acre-ft/yr (4.59 hm^3/yr); median of yearly mean discharges, 1.5 ft^3/s (0.04 m^3/s), 1,100 acre-ft/yr (1.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft^3/s (379 m^3/s) June 10, 1972, gage height, 13.12 ft (3.999 m), site and datum then in use, from floodmarks, from rating curve extended above 350 ft^3/s (9.91 m^3/s) on basis of contracted-opening measurement of peak flow; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 355 ft^3/s (10.1 m^3/s) at 0700 hours, July 25, gage height, 5.35 ft (1.631 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	11	.00	.20
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.2	.00	.28
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.6	.00	.40
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.5	12	.70
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.5	4.6	.26
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00	1.6
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.00	1.7
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.57	.00	1.7
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	1.2
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.94
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.80
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4
15	.00	.00	.00	.00	.00	.00	.00	.00	.18	.00	.00	1.7
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	1.5
17	.00	.00	.00	.00	.00	.00	.00	.00	.75	.00	.12	1.0
18	.00	.00	.00	.00	.00	.00	.00	.00	4.9	.03	.00	.83
19	.00	.00	.00	.00	.00	.00	.00	.00	4.8	.14	.00	.84
20	.00	.00	.00	.00	.00	.00	.00	.00	3.6	.32	.00	.81
21	.00	.00	.00	.00	.00	.00	.00	.00	2.4	.34	.00	.99
22	.00	.00	.00	.00	.00	.00	.00	.00	2.1	.21	.00	1.1
23	.00	.00	.00	.00	.00	.00	.00	.00	2.6	.17	.00	1.0
24	.00	.00	.00	.00	.00	.00	.00	.00	3.5	.07	.00	.90
25	.00	.00	.00	.00	.00	.00	.00	.00	4.8	43	.00	1.1
26	.00	.00	.00	.00	.00	.00	.00	.00	9.0	5.4	.09	1.3
27	.00	.00	.00	.00	.00	.00	.00	.00	11	1.8	.09	2.5
28	.00	.00	.00	.00	.00	.00	.00	.00	13	.49	.12	2.8
29	.00	.00	.00	.00	---	.00	.00	.00	14	.28	.26	1.8
30	.00	.00	.00	.00	---	.00	.00	.00	13	.15	.26	1.4
31	.00	---	.00	.00	---	.00	---	.00	---	.07	.26	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	89.63	92.46	17.96	35.69
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	2.99	2.98	.58	1.19
MAX	.00	.00	.00	.00	.00	.00	.00	.00	14	43	12	2.8
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	178	183	36	71

CAL YR 1981 TOTAL 16.12 MEAN .044 MAX 1.8 MIN .00 AC-FT 32
WTR YR 1982 TOTAL 235.74 MEAN .65 MAX 43 MIN .00 AC-FT 468

06408700 RHOADS FORK NEAR ROCHFORD, SD

LOCATION.--Lat 44°08'12", long 103°51'29", in NW¼SE¼NE¼ sec.15, T.2 N., R.2 E., Pennington County, Hydrologic Unit 10120110, on left bank 1.1 mi (1.8 km) upstream from South Fork Rapid Creek and 8.7 mi (14.0 km) west of Rochford.

DRAINAGE AREA.--7.95 mi^2 (20.59 km^2), approximately.

PERIOD OF RECORD.--November 1981 to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 5,965 ft (1,818 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Dec. 29 to Mar. 11, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 8.9 ft^3/s (0.25 m^3/s) at 1430 hours, June 23, gage height, 2.17 ft (0.661 m); maximum gage height, 2.19 ft (0.668 m) July 23 (backwater from vegetation); minimum daily discharge, 3.5 ft^3/s (0.10 m^3/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		5.1	4.6	3.9	3.8	4.2	4.4	4.6	4.8	5.2	5.6	6.8
2		5.1	4.5	3.8	3.8	4.1	4.4	4.5	4.8	5.2	5.6	6.9
3		5.1	4.4	3.8	3.7	4.1	4.4	4.6	4.8	5.1	5.6	7.1
4		5.1	4.4	3.9	3.7	4.1	4.4	4.6	4.8	5.0	5.6	6.9
5		5.1	4.4	3.9	3.7	4.0	4.4	4.6	4.8	5.0	5.6	6.9
6		5.0	4.4	3.8	3.8	4.0	4.4	4.6	4.8	5.0	5.9	6.4
7		5.0	4.4	3.8	3.8	4.0	4.4	4.6	4.8	5.0	5.9	5.6
8		5.0	4.4	3.8	3.8	4.0	4.4	4.6	4.8	5.0	5.9	5.8
9		5.0	4.4	3.7	3.7	4.1	4.4	4.6	4.8	5.0	5.8	6.3
10		5.0	4.4	3.5	3.8	4.1	4.4	4.6	4.8	4.9	5.8	6.3
11		5.0	4.4	3.6	3.8	4.1	4.4	4.5	5.0	4.9	5.8	6.5
12		5.0	4.4	3.6	3.9	4.1	4.5	4.6	5.1	4.9	5.8	6.5
13		5.0	4.4	3.6	4.0	4.1	4.5	4.7	5.2	4.8	6.0	6.4
14		5.0	4.3	3.7	4.0	4.1	4.5	4.7	5.2	4.8	6.0	6.6
15		5.0	4.3	3.7	4.0	4.1	4.6	4.7	5.1	4.8	5.9	6.5
16		5.0	4.3	3.6	4.1	4.1	4.6	4.7	5.0	4.8	6.0	6.5
17		5.0	4.2	3.6	4.1	4.1	4.6	4.7	5.0	4.8	6.1	6.4
18		5.0	4.2	3.7	4.2	4.2	4.6	4.6	5.0	5.0	6.1	6.4
19		5.0	4.2	3.7	4.3	4.2	4.6	4.7	5.0	5.2	6.2	6.2
20		4.9	4.2	3.6	4.3	4.2	4.6	4.7	5.0	5.2	6.3	6.3
21		4.9	4.2	3.6	4.6	4.1	4.6	4.7	5.0	5.2	6.3	6.2
22		4.9	4.2	3.6	4.5	4.1	4.7	4.7	5.0	5.2	6.3	6.1
23		4.8	4.2	3.6	4.4	4.1	4.5	4.7	5.3	5.6	6.5	6.1
24		4.8	4.1	3.7	4.2	4.1	4.6	4.7	5.9	5.6	6.4	6.1
25		4.8	4.1	3.7	4.2	4.1	4.6	4.8	5.6	5.6	6.4	6.2
26		4.8	4.1	3.8	4.2	4.1	4.5	4.8	5.6	5.6	6.4	6.2
27		4.7	4.1	3.8	4.2	4.1	4.5	4.8	5.5	5.6	6.7	6.1
28		4.7	4.0	3.8	4.2	4.2	4.6	4.8	5.6	5.6	6.8	6.2
29		4.7	3.9	3.8	---	4.3	4.6	4.7	5.5	5.6	6.7	6.2
30		4.7	3.9	3.8	---	4.3	4.6	4.8	5.3	5.6	6.8	6.2
31		---	3.9	3.8	---	4.3	---	4.8	---	5.6	6.7	---
TOTAL		148.2	131.9	115.3	112.8	127.8	135.3	144.8	152.9	160.4	189.5	190.9
MEAN		4.94	4.25	3.72	4.03	4.12	4.51	4.67	5.10	5.17	6.11	6.36
MAX		5.1	4.6	3.9	4.6	4.3	4.7	4.8	5.9	5.6	6.8	7.1
MIN		4.7	3.9	3.5	3.7	4.0	4.4	4.5	4.8	4.8	5.6	5.6
AC-FT		294	262	229	224	253	268	287	303	318	376	379

06408700 RHOADS FORK NEAR ROCHFORD, SD--Continued

RAINFALL, ACCUMULATED (INCHES), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							.00	.00	1.50	.00	.00	.00
2							.12	.00	1.15	.12	.10	.00
3							.00	.00	.00	.00	.18	.00
4							.06	.00	.00	.00	1.15	.00
5							.00	.00	.00	.10	.45	.10
6							.00	.00	.00	.00	.45	.00
7							.12	.00	.00	.00	.00	.00
8							.00	.00	.00	.00	.10	.10
9							.15	.00	.00	.14	.68	.00
10							.00	.48	.10	.08	.00	.30
11							.00	.06	.00	.00	.00	.00
12							.29	.22	.90	.00	.00	.00
13							.00	.44	.00	.00	.00	.00
14							.00	.12	.50	.00	.10	.75
15							.00	.72	.40	.00	.00	.00
16							.08	.12	.45	.00	.00	.00
17							.00	.00	.55	.00	.00	.00
18							.00	.00	.05	.00	.39	.00
19							.07	.90	.00	.00	.29	.00
20							.43	.93	.00	.40	.58	.00
21							.00	.00	.40	.00	.00	.00
22							.00	.00	.30	.00	.00	.00
23							.00	.00	.90	1.38	.18	.00
24							.00	.14	.00	1.00	.00	.00
25							.08	.00	.00	.63	.00	.14
26							.10	.00	1.25	.00	.00	.60
27							.00	.00	.00	.00	.38	.16
28							.00	.04	.00	.37	.00	.15
29							.00	.00	.00	.00	.00	.15
30							.00	.00	.10	.00	.00	.45
31							---	.00	---	.00	.00	---
TOTAL							1.50	4.17	8.55	4.22	5.03	2.90
MEAN							.05	.13	.29	.14	.16	.10
MAX							.43	.93	1.50	1.38	1.15	.75
MIN							.00	.00	.00	.00	.00	.00

WTR YR 1982 TOTAL 26.37 MEAN .14 MAX 1.50 MIN .00

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD

(Hydrologic benchmark and radiochemical station)

LOCATION.--Lat 44°00'49", long 103°49'48", in SW¼ sec.25, T.1 N., R.2 E., Pennington County, Hydrologic Unit 10120110, on right bank 50 ft (15 m) downstream from highway bridge, 250 ft (76 m) downstream from South Fork Castle Creek, 600 ft (183 m) upstream from high-water line of Deerfield Reservoir, 2.5 mi (4.0 km) southwest of Deerfield Dam, and 14 mi (23 km) northwest of Hill City.

DRAINAGE AREA.--83 mi² (215 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1948 to current year. Prior to October 1953, published as "above Deerfield Reservoir, near Deerfield".

REVISED RECORDS.--WSP 1917: 1952(M).

GAGE.--Water-stage recorder and grouted-rock control. Altitude of gage is 5,910 ft (1,800 m), from reservoir elevation. Prior to Aug. 31, 1948, nonrecording gage at site 50 ft (15 m) upstream at datum 2.05 ft (0.625 m) higher.

REMARKS.--Records good except those for winter periods, which are poor.

AVERAGE DISCHARGE.--34 years, 10.2 ft³/s (0.289 m³/s), 7,390 acre-ft/yr (9.11 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft³/s (31.7 m³/s) May 22, 1952, gage height, 5.81 ft (1.771 m), from rating curve extended above slope-area measurement at gage height, 5.67 ft (1.728 m); minimum, 1.2 ft³/s (0.034 m³/s) Apr. 25, 1969; minimum gage height, 1.35 ft (0.411 m) Nov. 12, 1949, Feb. 19, 1954, Mar. 7, 1957, Mar. 29, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 148 ft³/s (4.19 m³/s) at 1930 hours, Aug. 4, gage height, 3.65 ft (1.113 m); no peak above base of 100 ft³/s (2.83 m³/s); minimum daily, 5.0 ft³/s (0.14 m³/s) Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	7.9	6.6	7.0	6.8	7.7	10	12	17	12	11	9.6
2	7.7	7.9	6.8	7.2	6.5	7.7	8.4	13	20	12	10	9.8
3	7.4	7.9	7.0	7.2	6.5	7.7	11	13	18	12	10	9.8
4	7.7	7.4	7.0	7.2	6.0	7.2	9.8	13	16	12	26	9.6
5	8.4	7.4	7.0	7.2	6.4	7.0	8.8	12	16	12	21	12
6	8.1	7.4	7.0	6.5	6.6	7.5	9.3	12	15	12	14	12
7	8.1	7.7	6.8	6.8	6.6	8.0	9.8	12	16	11	12	10
8	8.4	7.7	6.8	7.0	6.6	8.2	10	12	16	11	11	9.8
9	8.6	7.2	6.8	6.5	6.4	8.1	11	12	14	11	12	9.6
10	8.6	7.0	7.3	5.6	6.4	7.7	11	14	14	11	12	9.6
11	8.4	7.2	7.2	5.8	6.4	8.2	12	13	14	11	11	9.8
12	9.0	7.2	7.0	5.8	6.4	8.6	17	12	15	11	11	9.8
13	8.6	7.4	6.8	6.0	6.4	8.5	15	14	16	10	10	9.6
14	8.6	7.4	6.5	6.2	6.4	8.4	16	16	16	10	10	11
15	8.6	7.4	6.5	5.5	6.8	8.4	15	16	15	9.8	10	11
16	8.6	7.4	6.6	5.0	6.8	8.4	14	16	14	9.8	9.8	11
17	8.6	7.4	6.8	5.4	6.6	8.2	13	15	14	9.8	9.8	9.8
18	7.9	7.4	6.4	6.4	6.8	8.1	14	16	14	9.8	9.8	9.6
19	8.1	7.2	6.0	6.2	7.0	7.9	12	16	13	9.8	12	9.3
20	8.1	7.0	6.5	6.0	6.8	7.9	12	27	13	9.6	12	9.3
21	7.7	6.6	6.5	6.0	6.6	7.7	12	19	13	9.3	11	9.6
22	7.5	6.8	6.6	5.8	6.4	7.4	12	17	12	9.3	10	9.3
23	7.7	7.1	6.8	5.6	7.4	7.2	13	16	14	9.3	10	9.3
24	7.9	7.4	7.1	6.0	6.4	7.8	13	16	14	9.8	11	9.3
25	7.9	7.2	7.5	6.5	7.4	7.6	13	16	13	14	10	9.8
26	7.9	7.0	7.5	7.0	7.0	7.6	13	15	14	16	9.8	9.3
27	8.1	6.7	7.3	6.8	7.0	9.3	13	15	14	11	9.3	10
28	8.1	6.4	7.0	6.8	7.0	11	13	14	13	11	11	11
29	8.1	6.4	6.8	6.8	---	11	13	14	13	11	10	11
30	8.1	6.2	7.0	6.8	---	5.2	13	14	12	11	9.8	12
31	7.9	---	6.7	6.8	---	7.9	---	14	---	10	9.6	---
TOTAL	251.8	216.3	212.2	197.4	186.4	249.1	367.1	456	438	338.3	355.9	302.6
MEAN	8.12	7.21	6.85	6.37	6.66	8.04	12.2	14.7	14.6	10.9	11.5	10.1
MAX	9.0	7.9	7.5	7.2	7.4	11	17	27	20	16	26	12
MIN	7.4	6.2	6.0	5.0	6.0	5.2	8.4	12	12	9.3	9.3	9.3
AC-FT	499	429	421	392	370	494	728	904	869	671	706	600

CAL YR 1981 TOTAL 3096.5 MEAN 8.48 MAX 13 MIN 6.0 AC-FT 6140
WTR YR 1982 TOTAL 3571.1 MEAN 9.78 MAX 27 MIN 5.0 AC-FT 7080

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES.--May 1964 to September 1980.

INSTRUMENTATION.--Recorder with thermograph attachment.

REMARKS.--Periodic samples obtained for analysis of suspended-sediment concentration most years. Monthly samples obtained for water-quality analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 22.0°C July 17, 1969; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 14...	1430	8.8	345	8.4	7.0	--	K10	71	252	72	53
NOV 05...	1230	7.4	430	7.5	2.0	10.2	<1	K20	266	18	58
DEC 01...	1330	6.8	320	8.6	.0	11.2	K9	92	274	9	59
JAN 05...	1330	7.2	420	7.8	.0	11.2	K7	50	268	26	58
FEB 08...	1530	5.5	450	8.1	.0	15.4	36	--	257	0	55
MAR 09...	1300	7.5	450	8.1	2.0	11.2	--	210	266	0	57
APR 06...	1515	11	470	8.2	3.0	11.6	--	110	276	18	60
MAY 03...	1430	13	470	--	13.0	10.0	K2	160	252	2	53
JUN 02...	1500	20	470	7.9	7.0	9.8	600	320	263	17	56
JUL 06...	1545	11	435	8.3	16.0	8.4	K12	160	251	20	51
AUG 11...	1430	11	439	8.3	19.0	8.3	35	430	266	7	56
SEP 01...	1630	9.4	450	8.1	16.5	8.6	--	--	258	32	52

DATE	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT 14...	29	1.5	1	.0	1.2	180	10	3.8	.2	8.6	250
NOV 05...	30	1.3	1	.0	1.0	250	<5.0	.7	.2	9.1	244
DEC 01...	32	1.4	1	.0	1.5	270	6.0	.9	.2	9.9	271
JAN 05...	30	1.5	1	.0	1.1	240	<5.0	1.0	.2	9.8	251
FEB 08...	29	1.4	1	.0	1.2	260	<5.0	1.3	.3	9.2	253
MAR 09...	30	1.4	1	.0	1.2	270	<5.0	1.1	.2	9.2	262
APR 06...	31	1.6	1	.0	1.1	260	5.0	1.3	.3	9.2	254
MAY 03...	29	1.6	1	.0	1.1	250	6.0	1.2	.2	7.9	268
JUN 02...	30	1.9	2	.1	1.7	246	14	1.6	.2	9.6	265
JUL 06...	30	1.9	2	.1	1.3	231	6.0	1.3	.1	8.7	240
AUG 11...	31	2.0	2	.1	1.2	261	9.0	1.3	.2	9.7	284
SEP 01...	31	1.6	1	.0	1.2	226	7.0	1.7	.2	8.9	325

< Less than.
K Non-ideal colony count.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 14...	215	.34	5.9	.14	.14	.010	.03	--	--	--
NOV 05...	--	.33	4.9	.20	.20	.030	.09	--	--	--
DEC 01...	273	.37	5.0	.13	.14	.040	.12	<.010	137	2.5
JAN 05...	--	.34	4.9	.19	.18	.020	.06	--	29	.56
FEB 08...	--	.34	3.7	.15	.16	<.010	.06	--	57	.84
MAR 09...	--	.36	5.3	.18	.16	<.010	--	--	--	--
APR 06...	266	.35	7.3	.12	.12	<.010	--	--	--	--
MAY 03...	250	.36	9.4	<.10	<.10	<.010	--	--	47	1.6
JUN 02...	263	.36	14.3	--	--	--	--	--	99	5.3
JUL 06...	241	.33	7.1	.10	.10	.051	.15	--	35	1.0
AUG 11...	268	.39	8.4	<.10	<.10	.020	.06	--	22	.65
SEP 01...	239	.44	8.2	<.10	<.10	.080	.25	--	20	.51

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
OCT 14...	1430	8.8	--	--	--	--	--	--	--	--	--
NOV 05...	1230	7.4	--	--	--	--	--	--	--	--	--
DEC 01...	1330	6.8	--	--	--	--	--	--	--	--	--
JAN 05...	1330	7.2	--	--	--	--	--	--	--	--	--
FEB 08...	1530	5.5	--	--	--	--	--	--	--	--	--
MAR 09...	1300	7.5	--	--	--	--	--	--	--	--	--
APR 06...	1515	11	2	<100	70	<1	<1	<1	10	8	2
MAY 03...	1430	13	--	--	--	--	--	--	--	--	--
JUN 02...	1500	20	--	--	--	--	--	--	--	--	--
JUL 06...	1545	11	--	--	--	--	--	--	--	--	--
AUG 11...	1430	11	2	<100	74	<1	<1	<1	<10	--	<1
SEP 01...	1630	9.4	--	--	--	--	--	--	--	--	--

< Less than.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)
APR											
06...	<3	2	<10	470	420	46	2	<10	4	30	20
AUG											
11...	<3	2	<10	250	230	16	1	<10	9	30	10

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
APR											
06...	12	<.1	<10	<1	<1	<1	73	<6.0	10	0	25
AUG											
11...	16	<.1	<10	1	<1	<1	76	<6.0	20	9	11

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)
AUG									
11...	1430	11	<5.5	<.4	<2.8	.4	<2.7	.4	.10

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)
AUG										
11...	1430	11	<.01	<.1	<.10	<1.0	<.01	.6	<.01	.1

DATE	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)
AUG										
11...	<.01	<.1	<.01	<.01	<.1	<.01	<.1	<.01	<.01	<.1

DATE	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)
AUG									
11...	<.01	<.1	<.01	<.1	<.01	<.1	<.01	<.01	<.01

< Less than.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PARATHION, TOTAL (UG/L) (39540)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	PERTHANE TOTAL (UG/L) (39034)	ENDOSULFAN, TOTAL (UG/L) (39388)	MIREX, TOTAL (UG/L) (39755)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)
AUG									
11...	<.01	<1	<10	<.01	<.10	<.01	<.01	<.10	<1
SEP									
01...	--	--	--	--	--	--	--	--	--

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL (UG/L) (39570)
AUG												
11...	1830	<.01	<.1	<.10	<1.0	<.01	.6	<.01	.1	<.01	<.1	<.01

DATE	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)
AUG												
11...	<.01	<.1	<.01	<.1	<.01	<.01	<.1	<.01	<.1	<.01	<.1	<.01

DATE	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL TRITHION, TOTAL (UG/L) (39790)	PARATHION, TOTAL (UG/L) (39540)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
AUG											
11...	<.01	<.1	<.01	<.01	<.01	<1	<10	<.01	<.01	<.01	<.01

< Less than.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	10.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	9.5	8.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	9.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	9.5	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	8.5	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	11.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	10.0	8.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	9.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	3.0	2.0
10	8.5	6.5	.0	.0	.0	.0	.0	.0	.0	.0	3.0	2.0
11	10.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	3.0	2.0
12	10.0	8.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	2.0
13	8.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
14	8.0	7.0	.0	.0	.0	.0	.0	.0	.0	.0	3.5	.0
15	8.5	4.5	.0	.0	.0	.0	.0	.0	.0	.0	3.5	3.0
16	9.5	4.5	.0	.0	.0	.0	.0	.0	.0	.0	3.5	3.0
17	9.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0	4.0	3.0
18	4.5	1.5	.0	.0	.0	.0	.0	.0	.0	.0	5.0	3.0
19	5.5	1.5	.0	.0	.0	.0	.0	.0	.0	.0	3.5	2.0
20	1.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.5	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.0	2.0
28	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.5	3.0
29	.0	.0	.0	.0	.0	.0	.0	.0	---	---	6.5	3.5
30	.0	.0	.0	.0	.0	.0	.0	.0	---	---	4.5	3.0
31	.0	.0	---	---	.0	.0	.0	.0	---	---	3.0	3.0
MONTH	11.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	3.5	3.0	14.5	6.0	11.0	6.5	---	---	20.0	12.0	18.0	12.0
2	3.5	3.0	14.5	6.5	---	---	---	---	16.5	13.5	16.0	10.0
3	3.5	3.0	14.5	7.0	---	---	---	---	14.5	12.0	15.5	9.5
4	3.5	3.0	12.0	8.0	---	---	---	---	18.0	9.0	16.0	11.0
5	3.5	3.0	9.5	4.5	---	---	---	---	15.5	9.0	14.5	11.5
6	3.5	2.0	9.5	3.0	---	---	---	---	16.5	11.0	15.0	9.5
7	3.5	2.0	11.0	5.5	---	---	16.0	9.5	18.5	11.5	16.0	10.0
8	3.5	.0	13.5	6.0	---	---	18.5	11.0	16.0	11.5	15.5	10.5
9	.0	.0	12.0	8.0	---	---	16.0	10.5	15.0	11.5	16.5	10.0
10	1.0	.0	11.0	8.0	---	---	17.0	10.5	16.5	11.0	16.0	10.5
11	6.0	.5	8.0	6.5	---	---	18.0	9.5	21.0	14.5	12.0	10.0
12	6.5	3.5	9.0	6.5	---	---	18.0	11.0	22.0	16.0	13.0	10.0
13	9.0	3.5	8.5	7.0	---	---	19.0	11.0	21.0	14.5	10.5	9.5
14	9.0	3.5	9.0	6.5	---	---	20.0	13.5	22.0	16.5	9.5	7.0
15	8.5	3.5	9.0	7.0	---	---	20.5	12.0	21.5	15.5	9.0	6.5
16	6.5	3.5	11.5	6.5	---	---	19.0	13.5	22.0	15.5	13.5	8.0
17	8.0	3.0	11.5	8.0	---	---	18.5	10.0	22.0	15.5	13.5	7.0
18	7.0	2.0	14.0	6.5	---	---	18.0	11.0	21.5	17.0	12.0	6.5
19	3.5	2.0	12.0	9.0	---	---	19.0	11.0	19.0	15.5	11.5	6.5
20	6.0	2.0	10.0	8.0	---	---	20.0	11.5	21.0	15.5	11.0	6.0
21	7.0	2.0	9.5	6.5	---	---	19.0	13.0	21.5	15.5	10.5	6.5
22	11.0	2.0	15.5	6.0	---	---	20.5	14.5	18.0	15.0	13.5	9.0
23	12.0	3.0	13.5	9.0	---	---	21.5	14.5	18.5	13.0	13.0	8.5
24	12.0	3.5	11.0	8.0	---	---	19.0	15.0	18.5	13.5	11.5	8.0
25	8.0	5.5	12.0	7.0	---	---	18.5	15.0	16.5	14.0	12.0	8.5
26	5.0	3.5	14.0	6.5	---	---	19.0	14.0	20.0	13.0	11.0	8.0
27	9.5	5.5	18.0	7.0	---	---	18.0	13.5	20.0	13.5	14.5	9.5
28	13.0	6.0	14.5	9.0	---	---	16.0	13.5	18.0	14.5	13.0	9.0
29	9.0	6.0	14.5	6.0	---	---	16.0	11.0	19.5	15.0	10.0	7.0
30	11.5	3.0	14.5	7.0	---	---	18.5	11.0	20.5	14.5	9.0	6.5
31	---	---	14.5	6.5	---	---	18.5	11.5	20.0	14.0	---	---
MONTH	13.0	.0	18.0	3.0	11.0	6.5	21.5	9.5	22.0	9.0	18.0	6.0

06409500 DEERFIELD RESERVOIR NEAR HILL CITY, SD

LOCATION.--Lat 44°01'41", long 103°47'09", in NE¼SW¼ sec.20, T.1 N., R.3 E., at dam on Castle Creek, Hydrologic Unit 10120110, 0.4 mi (0.6 km) upstream from Dutchman Creek and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--95 mi^2 (246 km^2), approximately.

PERIOD OF RECORD.--May 1947 to current year (monthend contents only). Some elevations obtained during period of initial filling, December 1945 to May 1947, are available in Bureau of Reclamation files. Prior to October 1953, published as "near Deerfield."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to July 20, 1964, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 3, 1945; dam completed in 1947. Usable capacity, 15,153 acre-ft (18.7 hm^3) between elevations 5,839 ft (1,779.7 m), lowest outlet, and 5,908 ft (1,800.8 m), crest of spillway. Dead storage below elevation 5,839 ft (1,779.7 m), 565 acre-ft (0.697 hm^3). Figures given herein represent usable contents. Water is used to supplement Rapid City water supply and for irrigation in Rapid Creek basin downstream from Rapid City.

COOPERATION.--Records of elevation and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 15,340 acre-ft (18.9 hm^3) May 22, 1952, elevation, 5,908.50 ft (1,800.911 m), from capacity table extended above elevation 5,908.00 ft (1,800.758 m), crest of spillway; minimum observed, 5 acre-ft (6,160 m^3) Oct. 2, 1959, elevation, 5,839.10 ft (1,779.758 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 14,978 acre-ft (18.5 hm^3) Apr. 1, elevation, 5,907.58 ft (1,800.630 m); minimum, 12 acre-ft (0.015 hm^3) Sept. 26, elevation, 5,839.22 ft (1,779.794 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents
Sept. 30	5902.66	13030	
Oct. 31	5902.84	13099	+69
Nov. 30	5903.56	13375	+276
Dec. 31	5904.49	13737	+362
CAL YR 1981			-328
Jan. 31	5905.33	14069	+332
Feb. 28	5906.18	14409	+340
Mar. 31	5907.50	14946	+537
Apr. 30	5903.11	13202	-1744
May 31	5898.85	11623	-1579
June 30	5894.92	10267	-1356
July 31	5882.19	6504	-3763
Aug. 31	5864.38	2717	-3787
Sept. 30	5840.97	116	-2601
WTR YR 1982			-12914

06410000 CASTLE CREEK BELOW DEERFIELD DAM, SD

LOCATION.--Lat 44°01'45", long 103°46'53", in NW¼SE¼ sec.20, T.1 N., R.3 E., Pennington County, Hydrologic Unit 10120110, on left bank 200 ft (61 m) upstream from Dutchman Creek, 1,100 ft (335 m) downstream from Deerfield Dam, and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--96 mi^2 (249 km^2), approximately.

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,784.52 ft (1,763.122 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 15, 1947, at site 400 ft (122 m) downstream at datum 0.23 ft (0.070 m) higher. Oct. 15, 1947, to Sept. 1, 1948, at site 550 ft (168 m) downstream at datum 1.77 ft (0.540 m) lower, and Sept. 2, 1948, to Nov. 2, 1971, at site 300 ft (91 m) upstream at datum 4.0 ft (1.22 m) higher.

REMARKS.--Records good. Flow completely regulated by Deerfield Reservoir 1,100 ft (335 m) upstream. (See station 06409500.) Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 11.2 ft^3/s (0.317 m^3/s), 8,110 acre-ft/yr (10.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 200 ft^3/s (5.66 m^3/s) May 22, 1952; maximum gage height, 4.99 ft (1.521 m) Sept. 24, 1982 (backwater from culverts and heavy moss growth); no flow at times in 1948, 1950-60.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 94 ft^3/s (2.66 m^3/s) at 1530 hours, Aug. 4, gage height, 4.83 ft (1.472 m); maximum gage height, 4.99 ft (1.521 m) Sept. 24 (backwater from culverts and heavy moss growth); minimum daily discharge, 1.9 ft^3/s (0.05 m^3/s) for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	2.4	2.1	2.2	2.4	3.3	20	42	47	61	83	76
2	6.8	2.3	2.2	2.2	2.3	3.3	26	42	47	85	83	76
3	6.4	2.3	2.2	2.2	2.3	3.4	32	43	47	85	83	82
4	6.6	2.2	2.2	2.2	2.4	3.5	31	45	47	85	83	86
5	6.6	2.0	2.2	2.3	2.4	3.4	40	45	47	84	82	85
6	6.4	2.0	2.2	2.3	2.4	3.5	51	45	47	84	82	84
7	6.4	2.0	2.2	2.3	2.4	3.5	51	45	47	84	82	83
8	7.2	1.9	2.2	2.3	2.4	3.6	51	45	46	84	81	83
9	6.8	1.9	2.2	2.3	2.5	3.6	51	45	46	83	81	82
10	6.6	2.0	2.2	2.3	2.5	3.7	51	45	46	83	81	84
11	6.4	1.9	2.2	2.2	2.5	3.8	50	44	46	83	80	85
12	6.3	2.0	2.2	2.2	2.6	3.9	49	45	46	83	71	84
13	6.1	2.0	2.2	2.3	2.6	3.9	49	45	47	82	62	82
14	6.1	1.9	2.2	2.3	2.7	4.0	49	45	47	82	64	82
15	6.1	1.9	2.2	3.0	2.7	4.0	49	44	47	82	64	82
16	7.0	1.9	2.2	3.2	2.8	4.0	48	44	47	81	64	80
17	8.2	1.9	2.2	2.3	2.8	4.1	48	44	47	81	64	82
18	7.2	1.9	2.2	2.3	2.9	4.1	48	45	47	80	76	79
19	7.3	1.9	2.2	2.2	2.9	4.2	47	45	47	80	66	62
20	7.0	1.9	2.2	2.2	2.9	4.2	45	49	46	80	66	40
21	7.0	2.1	2.2	2.2	3.0	4.3	45	49	46	80	63	29
22	7.0	2.1	2.2	2.2	3.0	4.3	45	48	46	80	68	28
23	6.8	2.1	2.2	2.2	3.1	4.5	44	47	49	80	61	28
24	6.8	2.0	2.2	2.2	3.1	4.5	44	47	50	79	61	38
25	6.8	2.0	2.2	2.3	3.1	4.6	44	46	49	80	80	17
26	6.6	2.0	2.2	2.3	3.1	4.6	44	44	49	80	73	9.5
27	6.6	2.1	2.2	2.4	3.2	4.6	43	47	48	79	69	2.5
28	6.6	2.1	2.2	2.4	3.2	4.7	43	47	49	79	70	1.9
29	5.0	2.0	2.2	2.4	---	7.1	43	47	49	79	73	3.2
30	2.5	2.1	2.2	2.4	---	12	42	47	48	82	67	4.6
31	2.5	---	2.2	2.4	---	16	---	47	---	83	70	---
TOTAL	198.5	60.8	68.1	72.2	76.2	146.2	1323	1408	1417	2513	2253	1740.7
MEAN	6.40	2.03	2.20	2.33	2.72	4.72	44.1	45.4	47.2	81.1	72.7	58.0
MAX	8.2	2.4	2.2	3.2	3.2	16	51	49	50	85	83	86
MIN	2.5	1.9	2.1	2.2	2.3	3.3	20	42	46	61	61	1.9
AC-FT	394	121	135	143	151	290	2620	2790	2810	4980	4470	3450

CAL YR 1981 TOTAL 3259.9 MEAN 8.93 MAX 33 MIN 1.9 AC-FT 6470
WTR YR 1982 TOTAL 11276.7 MEAN 30.9 MAX 86 MIN 1.9 AC-FT 22370

06410500 RAPID CREEK ABOVE PACTOLA RESERVOIR, AT SILVER CITY, SD

LOCATION.--Lat 44°05'05", long 103°34'48", in SW¼SE¼ sec.36, T.2 N., R.4 E., Pennington County, Hydrologic Unit 10120110, on right bank 0.8 mi (1.3 km) west of Silver City and 3.0 mi (4.8 km) downstream from Slate Creek.

DRAINAGE AREA.--292 mi² (756 km²).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,620.00 ft (1,408.176 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Deerfield Reservoir on Castle Creek since December 1945 (see station 06409500). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 40.4 ft³/s (1.144 m³/s), 29,270 acre-ft/yr (36.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,060 ft³/s (58.3 m³/s) May 15, 1965, gage height, 10.44 ft (3.182 m); from rating curve extended above 1,000 ft³/s (28.3 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 4.0 ft³/s (0.11 m³/s) Jan. 20, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 332 ft³/s (9.40 m³/s) at 0930 hours, May 20; gage height, 6.35 ft (1.935 m); minimum daily, 7.5 ft³/s (0.21 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	14	10	9.0	10	13	25	58	98	93	108	84
2	18	13	10	9.0	9.5	12	26	58	133	120	105	84
3	18	13	10	9.0	9.5	12	33	59	122	126	105	82
4	17	12	10	9.0	9.0	11	42	58	112	124	108	92
5	19	12	11	9.0	8.0	10	34	56	103	120	120	93
6	21	11	11	8.0	8.5	12	51	55	103	124	110	102
7	21	12	11	8.5	9.0	12	52	55	103	119	122	97
8	21	12	10	9.0	9.5	12	59	55	97	119	108	93
9	21	9.9	10	9.0	9.0	13	46	55	93	115	119	90
10	22	9.9	11	7.5	8.5	15	64	67	88	122	117	90
11	22	9.9	10	8.0	9.0	15	56	63	90	115	107	95
12	21	9.2	10	9.0	9.5	15	66	60	88	112	103	97
13	21	12	10	9.5	10	16	69	66	95	110	102	93
14	21	11	9.5	10	11	17	66	82	110	107	105	105
15	21	11	10	9.0	10	18	66	95	108	98	103	112
16	20	11	10	8.0	11	18	62	107	102	103	102	105
17	20	11	9.5	9.0	12	18	60	92	102	102	100	100
18	21	11	9.5	9.5	12	17	59	90	102	98	100	98
19	22	11	9.0	9.5	13	17	56	87	95	97	100	90
20	21	10	9.5	9.0	13	17	55	255	90	95	102	69
21	21	10	10	9.0	12	16	56	230	93	95	98	43
22	16	11	10	8.5	11	17	58	193	92	95	95	40
23	21	11	10	8.5	10	18	60	174	102	105	93	40
24	24	11	10	9.0	10	8.5	59	160	133	114	93	43
25	22	9.9	9.5	9.5	11	14	60	150	117	122	90	50
26	21	11	9.5	10	12	14	60	135	114	135	88	30
27	21	10	9.0	11	12	9.9	60	122	114	115	87	26
28	21	11	9.0	10	13	12	59	122	107	108	92	24
29	21	10	8.5	10	---	17	59	119	98	124	90	21
30	18	9.5	9.0	10	---	18	59	105	98	108	88	22
31	15	---	9.0	9.5	---	14	---	102	---	108	85	---
TOTAL	627	330.3	304.5	282.5	292.0	448.4	1637	3185	3102	3448	3145	2210
MEAN	20.2	11.0	9.82	9.11	10.4	14.5	54.6	103	103	111	101	73.7
MAX	24	14	11	11	13	18	69	255	133	135	122	112
MIN	15	9.2	8.5	7.5	8.0	8.5	25	55	88	93	85	21
AC-FT	1240	655	604	560	579	889	3250	6320	6150	6840	6240	4380

CAL YR 1981 TOTAL 7947.6 MEAN 21.8 MAX 78 MIN 7.0 AC-FT 15760
WTR YR 1982 TOTAL 19011.7 MEAN 52.1 MAX 255 MIN 7.5 AC-FT 37710

06411000 PACTOLA RESERVOIR NEAR SILVER CITY, SD

LOCATION.--Lat 44°04'20", long 103°29'17", in NE¼SW¼ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, in outlet works of dam on Rapid Creek, 3.8 mi (6.1 km) east of Silver City.

DRAINAGE AREA.--319 mi^2 (826 km^2).

PERIOD OF RECORD.--August 1956 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to Feb. 18, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by an earthfill dam completed August 1956. Storage began August 22, 1956. Conservation capacity, 54,960 acre-ft (67.8 hm^3) between elevations 4,456.1 ft (1,358.22 m) and 4,580.2 ft (1,396.04 m). Combined dead and inactive storage below elevation 4,456.1 ft (1,358.22 m) is 1,003 acre-ft (1.24 hm^3). Flood storage capacity, 43,050 acre-ft (53.1 hm^3) between elevations 4,580.2 ft (1,396.04 m) and 4,621.5 ft (1,408.63 m), crest of spillway. Surcharge capacity, 15,780 acre-ft (19.5 hm^3) between elevations 4,621.5 ft (1,408.63 m) and 4,633.7 ft (1,412.35 m), maximum pool elevation. Figures given herein represent contents above elevation 4,456.1 ft (1,358.22 m). Reservoir provides flood control and water for municipal and irrigation uses.

COOPERATION.--Records of elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 60,970 acre-ft (75.2 hm^3) May 19, 1964, elevation, 4,585.87 ft (1,397.773 m); minimum observed since initial filling, 40,566 acre-ft (50.0 hm^3) Oct. 2, 1981, elevation, 4,561.50 ft (1,390.345 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 56,228 acre-ft (69.3 hm^3) July 2, elevation, 4,581.66 ft (1,396.490 m); minimum, 40,566 acre-ft (50.0 hm^3) Oct. 2, elevation, 4,561.50 ft (1,390.345 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents
Sept. 30	4561.57	40615	
Oct. 31	4562.18	41039	+424
Nov. 30	4562.43	41214	+175
Dec. 31	4562.14	41011	-203
CAL YR 1981			-6088
Jan. 31	4562.02	40927	-84
Feb. 28	4562.12	40997	+70
Mar. 31	4563.05	41648	+651
Apr. 30	4567.72	45017	+3369
May 31	4574.99	50615	+5598
June 30	4581.50	56088	+5473
July 31	4580.28	55031	-1057
Aug. 31	4580.15	54919	-112
Sept. 30	4580.39	55126	+207
WTR YR 1982			+14511

06411500 RAPID CREEK BELOW PACTOLA DAM, SD

LOCATION.--Lat 44°04'36", long 103°28'54", in SW¼NE¼ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, on right bank 2,000 ft (610 m) downstream from Pactola Dam, 3.9 mi (6.3 km) upstream from Deer Creek and 13 mi (21 km) west of Rapid City.

DRAINAGE AREA.--320 mi² (829 km²), approximately.

PERIOD OF RECORD.--October 1928 to September 1932 (combined records of Creek and Dakota Power and Light Co. flume), July 1946 to current year. Prior to October 1953, published as "near Pactola." Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1931(M).

GAGE.--Water-stage recorder; concrete control since Oct. 16, 1962. Datum of gage is 4,406.00 ft (1,342.949 m) National Geodetic Vertical Datum of 1929, Bureau of Reclamation bench mark. Apr. 19, 1929, to June 30, 1932, nonrecording gage at site 3,500 ft (1,070 m) upstream at different datum. July 24, 1946, to Aug. 24, 1947, nonrecording gage and Aug. 25, 1947, to Nov. 18, 1953, water-stage recorder, at site 2 mi (3 km) upstream at different datum.

REMARKS.--Records good except those for period of no gage-height record, Dec. 30 to Feb. 11, which are poor. Flow regulated by dam on Castle Creek since Dec. 3, 1945 (see station 06409500), and completely regulated by Pactola Reservoir 2,000 ft (610 m) upstream since Aug. 22, 1956 (see station 06411000).

AVERAGE DISCHARGE.--40 years, 43.9 ft³/s (1.243 m³/s), 31,810 acre-ft/yr (39.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft³/s (61.5 m³/s) May 22, 1952, gage height, 6.74 ft (2.054 m), site and datum then in use; no flow Oct. 11-17, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 139 ft³/s (3.94 m³/s) July 3; minimum daily, 7.8 ft³/s (0.22 m³/s) Nov. 21, 28, 29.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

6.9	6.8	7.6	49
7.0	9.5	7.8	78
7.2	17	8.1	147
7.4	29		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	12	12	12	13	12	12	18	20	59	123	88
2	23	11	12	12	13	12	12	18	20	90	123	88
3	14	11	12	13	13	12	12	29	20	139	125	90
4	14	11	12	13	14	12	12	37	20	136	118	90
5	14	9.4	15	13	14	12	12	44	20	136	108	90
6	14	9.4	14	13	14	12	12	47	20	136	103	88
7	14	9.4	14	12	14	12	12	48	21	130	106	86
8	15	9.4	14	12	14	12	12	50	22	136	106	86
9	12	9.4	14	12	14	13	12	50	22	136	108	86
10	11	9.4	14	12	14	12	12	47	21	136	108	86
11	10	8.8	14	12	14	12	13	42	20	136	108	86
12	9.7	8.8	14	12	14	12	13	39	20	134	106	86
13	9.7	8.8	14	12	14	12	13	37	20	134	106	86
14	9.4	8.8	14	12	14	13	12	34	20	134	106	86
15	9.4	8.6	13	11	14	13	12	22	20	134	103	85
16	10	8.6	13	11	14	13	12	20	20	136	103	94
17	11	8.6	13	11	14	13	12	20	21	136	103	103
18	11	8.6	12	12	14	13	12	20	21	136	106	101
19	11	8.3	12	13	14	13	12	20	21	136	108	101
20	11	8.0	13	13	14	13	13	20	21	136	106	94
21	11	7.8	13	13	13	13	13	20	21	128	106	71
22	11	8.0	13	13	12	13	12	20	21	120	106	50
23	11	8.0	12	13	11	13	12	20	21	120	106	47
24	11	8.0	12	14	12	12	12	20	21	120	106	47
25	11	8.3	12	14	12	12	13	20	42	120	106	47
26	11	8.6	12	14	12	12	13	19	53	120	103	48
27	12	8.6	12	14	12	12	14	19	53	123	103	47
28	11	7.8	12	13	12	12	19	20	53	123	103	47
29	12	7.8	12	13	---	12	19	20	53	123	103	35
30	12	12	12	13	---	12	19	20	53	123	94	28
31	12	---	12	13	---	12	---	20	---	123	85	---
TOTAL	399.2	272.2	399	390	373	383	390	880	801	3929	3304	2267
MEAN	12.9	9.07	12.9	12.6	13.3	12.4	13.0	28.4	26.7	127	107	75.6
MAX	41	12	15	14	14	13	19	50	53	139	125	103
MIN	9.4	7.8	12	11	11	12	12	18	20	59	85	28
AC-FT	792	540	791	774	740	760	774	1750	1590	7790	6550	4500

CAL YR 1981 TOTAL 11440.4 MEAN 31.3 MAX 142 MIN 7.8 AC-FT 22690
WTR YR 1982 TOTAL 13787.4 MEAN 37.8 MAX 139 MIN 7.8 AC-FT 27350

06412500 RAPID CREEK ABOVE CANYON LAKE, NEAR RAPID CITY, SD

LOCATION.--Lat 44°03'04", long 103°18'47", in NE¼NE¼ sec.18, T.1 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on right bank at bridge on State Highway 40, 1.0 mi (1.6 km) southwest of city limits of Rapid City and 2.8 mi (4.5 km) downstream from Victoria Creek.

DRAINAGE AREA.--371 mi² (961 km²).

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,405.39 ft (1,037.963 m) National Geodetic Vertical Datum of 1929, levels by Corps of Engineers. Prior to Oct. 6, 1947, nonrecording gage, Oct. 6, 1947, to Nov. 2, 1967, and Oct. 1, 1968, to Sept. 30, 1976, water-stage recorder all at datum 2.0 ft (0.61 m) higher. Nov. 3, 1967, to Sept. 30, 1968, nonrecording gage at site 0.2 mi (0.3 km) downstream at datum 1.12 ft (0.341 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by dam on Castle Creek since December 1945 (see station 06409500) and by Pactola Reservoir 21 mi (34 km) upstream since August 1956 (see station 06411000). Several observations of water quality were made during the year.

AVERAGE DISCHARGE.--36 years, 39.0 ft³/s (1.104 m³/s), 28,260 acre-ft/yr (34.8 hm³/yr); median of yearly mean discharges, 34 ft³/s (0.96 m³/s), 24,600 acre-ft/yr (30 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft³/s (884 m³/s) June 9, 1972, gage height, 17.77 ft (5.416 m), present datum, from floodmarks, from rating curve extended above 1,300 ft³/s (36.8 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1950-51, 1957-60, 1962-63, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 264 ft³/s (7.48 m³/s) at 2110 hours, July 22, gage height, 4.57 ft (1.393 m); minimum daily, 0.04 ft³/s (0.001 m³/s) Nov. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	1.7	.20	5.0	4.0	6.0	3.0	12	24	58	116	91
2	23	1.7	.50	4.0	4.0	5.4	2.6	11	25	76	113	91
3	12	1.7	1.0	2.8	3.6	4.8	2.6	10	25	131	111	92
4	4.0	1.7	2.0	2.9	3.3	4.0	3.0	26	24	141	111	93
5	3.0	1.7	5.0	3.0	3.0	3.4	3.0	30	24	144	110	92
6	3.0	1.5	7.0	2.5	3.5	5.0	3.0	37	24	148	110	92
7	2.0	1.2	7.0	2.5	4.0	6.0	3.2	38	23	143	110	91
8	1.4	.90	5.0	3.0	3.0	8.0	3.5	40	23	146	110	92
9	1.4	.80	5.0	2.5	2.5	8.0	3.7	41	23	150	110	91
10	1.2	.80	6.7	2.0	3.0	6.8	4.0	45	23	149	108	88
11	.80	.80	6.8	2.5	3.0	8.1	5.9	38	22	148	108	88
12	5.6	.70	4.5	3.0	3.5	6.2	4.5	36	22	147	108	89
13	2.7	.60	6.8	3.5	5.0	5.9	4.2	32	21	147	106	88
14	2.0	.20	6.0	4.0	9.0	5.3	3.4	37	26	145	108	92
15	1.7	.20	7.5	3.0	9.0	4.4	3.5	32	27	145	108	91
16	1.7	.20	7.7	2.0	8.0	4.0	3.5	22	31	145	108	92
17	1.4	.10	7.8	2.5	10	4.0	3.5	18	35	145	108	102
18	1.2	.04	7.9	4.0	9.0	3.5	3.5	16	34	142	107	101
19	1.2	.22	8.0	3.7	8.2	3.5	4.0	14	31	141	107	103
20	1.2	.12	12	3.5	7.6	3.1	4.0	21	29	140	105	99
21	1.2	.99	9.9	3.2	7.4	3.0	4.0	23	28	135	105	81
22	1.2	1.2	9.6	3.0	7.5	4.0	3.8	22	28	138	105	60
23	.90	.60	9.0	5.0	6.6	5.0	3.5	22	27	132	105	44
24	2.6	.40	9.0	6.0	6.4	4.6	3.5	37	28	125	105	43
25	2.2	.40	9.0	6.3	6.0	4.2	3.5	32	29	155	105	41
26	2.3	.17	9.0	6.5	6.0	4.5	3.5	26	44	131	104	41
27	1.9	.20	8.0	6.7	5.5	3.5	4.0	22	51	127	104	41
28	1.7	.20	6.8	6.2	3.9	3.5	6.0	29	54	124	104	43
29	1.4	.20	5.8	5.0	---	3.6	12	40	56	121	104	40
30	1.2	.20	5.4	4.5	---	4.8	13	32	56	121	103	29
31	1.4	---	5.0	4.0	---	3.8	---	28	---	116	92	---
TOTAL	118.50	21.48	200.90	118.3	155.5	149.9	128.4	869	922	4156	3320	2321
MEAN	3.82	.71	6.48	3.82	5.55	4.84	4.28	28.0	30.7	134	107	77.4
MAX	30	1.7	12	6.7	10	8.1	13	45	56	155	116	103
MIN	.80	.04	.20	2.0	2.5	3.0	2.6	10	21	58	92	29
AC-FT	235	43	398	235	308	297	255	1720	1830	8240	6590	4600

CAL YR 1981 TOTAL 8685.54 MEAN 23.8 MAX 126 MIN .04 AC-FT 17230
WTR YR 1982 TOTAL 12480.94 MEAN 34.2 MAX 155 MIN .04 AC-FT 24760

06413650 LIME CREEK AT MOUTH, AT RAPID CITY, SD

LOCATION.--Lat 44°04'27", long 103°15'53", in NW¼NE¼SW¼ sec.3, T.1 N., R.7 E., Pennington County, 500 ft (152 m) above mouth and 1,000 ft (305 m) downstream from Canyon Lake Drive.

DRAINAGE AREA.--10.1 mi² (26.2 km²).

PERIOD OF RECORD.--Seasonal records only April 1981 to July 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 3,280 ft (1,000 m), from topographic map.

REMARKS.--Records good. Some flow is pumped from stream for irrigation of lawns and gardens.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 25, 1982, reached a stage of 63.6 ft (19.39 m), from floodmarks. A discharge of 103 ft³/s (2.92 m³/s) was measured July 22, 1982.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge during period, 64 ft³/s (1.81 m³/s) at 0730 hours, June 29, gage height, 62.08 ft (18.922 m); minimum daily discharge, 0.69 ft³/s (0.020 m³/s) May 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	1.2					---	.75	2.5	3.1		
2	1.0	1.2					---	.69	3.8	2.5		
3	1.2	---					---	.69	3.0	1.9		
4	1.1	---					---	.81	3.0	2.0		
5	2.3	---					---	.77	3.3	2.6		
6	1.3	---					---	.77	2.7	2.3		
7	1.2	---					---	.79	2.7	1.9		
8	1.5	---					---	1.1	4.8	2.6		
9	1.3	---					---	.87	2.7	2.3		
10	1.2	---					---	2.8	2.9	2.1		
11	2.8	---					---	1.1	2.8	2.0		
12	4.4	---					---	.92	2.3	2.0		
13	1.3	---					---	3.5	2.4	1.8		
14	1.2	---					---	5.9	3.0	1.9		
15	1.2	---					---	6.9	3.7	1.7		
16	1.2	---					---	3.0	4.6	1.9		
17	1.2	---					---	3.2	3.2	1.8		
18	1.1	---					---	2.0	2.4	2.0		
19	1.1	---					---	3.3	2.5	1.8		
20	1.4	---					---	6.2	2.4	2.0		
21	1.5	---					---	3.1	2.3	2.4		
22	1.3	---					---	3.1	2.7	---		
23	1.3	---					---	6.2	2.0	---		
24	1.3	---					---	3.1	2.1	---		
25	1.2	---					---	2.6	2.5	---		
26	1.2	---					---	2.5	2.4	---		
27	1.2	---					---	2.6	2.0	---		
28	1.1	---					---	5.7	1.9	---		
29	1.1	---					---	2.8	2.6	---		
30	1.3	---					.82	2.6	2.0	---		
31	1.2	---					---	2.5	---	---		
TOTAL	43.65	---					---	82.86	83.2	---		
MEAN	1.41	---					---	2.67	2.77	---		
MAX	4.4	---					---	6.9	4.8	---		
MIN	.95	---					---	.69	1.9	---		
AC-FT	87	---					---	164	165	---		

06413700 RAPID CREEK ABOVE WATER TREATMENT PLANT, AT RAPID CITY, SD

LOCATION.--Lat 44°04'29", long 103°15'34", in SW¼SW¼NE¼ sec.3, T.1 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on right bank at downstream side of foot bridge in Sioux Park, and 700 ft (213 m) downstream from Sheridan Lake road.

DRAINAGE AREA.--404 mi^2 (1,046 km^2), revised.

PERIOD OF RECORD.--May 1980 to July 1982 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 3,266.31 ft (995.571 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are fair. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm^2). Flow regulated by Pactola Reservoir 24 mi (39 km) upstream (see station 06411000). Several observations of water quality were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 360 ft^3/s (10.2 m^3/s) July 25, 1981, gage height, 6.93 ft (2.112 m); minimum daily discharge, 7.5 ft^3/s (0.21 m^3/s) Aug. 3, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s (1,420 m^3/s) June 9, 1972, stage unknown. Flood of July 25, 1982, reached a stage of 10.1 ft (3.08 m), from floodmarks.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 196 ft^3/s (5.55 m^3/s) at 1500 hours, July 8, gage height, 6.49 ft (1.978 m); minimum daily discharge, 11.0 ft^3/s (0.31 m^3/s) Oct. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	19	17	19	21	20	19	21	39	68		
2	30	20	20	21	21	20	19	20	45	85		
3	21	20	20	20	19	18	18	19	46	150		
4	14	20	18	19	18	20	18	31	43	161		
5	17	19	19	19	18	20	19	40	40	162		
6	13	19	23	17	20	20	18	47	36	160		
7	12	19	22	18	21	20	20	49	35	156		
8	11	18	21	18	20	20	20	51	42	152		
9	13	18	22	18	19	25	18	52	35	158		
10	13	17	22	17	19	22	19	62	33	161		
11	18	17	22	18	19	21	21	51	33	161		
12	26	17	19	18	19	21	22	49	33	159		
13	15	18	21	19	19	21	22	54	35	158		
14	15	18	20	21	24	21	22	64	41	159		
15	15	17	23	20	23	22	20	63	46	163		
16	14	17	20	19	20	21	18	41	58	---		
17	14	17	19	20	22	23	19	38	53	---		
18	14	17	21	21	21	22	20	36	49	---		
19	13	17	20	18	21	24	20	33	44	---		
20	14	17	23	18	22	21	19	47	43	---		
21	16	17	25	18	22	20	20	43	38	---		
22	16	18	22	18	22	23	20	38	36	---		
23	17	18	18	18	22	23	19	46	33	---		
24	16	17	17	19	18	21	19	55	36	---		
25	18	17	18	19	19	18	17	48	34	---		
26	19	17	22	28	19	18	17	45	58	---		
27	20	17	22	23	20	18	16	40	60	---		
28	21	17	19	21	21	18	17	51	58	---		
29	19	17	19	20	---	20	21	57	61	---		
30	19	17	15	20	---	21	22	47	66	---		
31	19	---	16	19	---	19	---	41	---	---		
TOTAL	541	533	625	601	569	641	579	1379	1309	---		
MEAN	17.5	17.8	20.2	19.4	20.3	20.7	19.3	44.5	43.6	---		
MAX	39	20	25	28	24	25	22	64	66	---		
MIN	11	17	15	17	18	18	16	19	33	---		
AC-FT	1070	1060	1240	1190	1130	1270	1150	2740	2600	---		

CAL YR 1981 TOTAL 13261.6 MEAN 36.3 MAX 146 MIN 7.5 AC-FT 26300

06413800 DEADWOOD AVENUE DRAIN AT MOUTH, AT RAPID CITY, SD

LOCATION.--Lat 44°04'58", long 103°15'34", in SW¼SE¼SE¼ sec.34, T.2 N., R.7 E., Pennington County, 300 ft (91 m) upstream from mouth.

DRAINAGE AREA.--2.2 mi² (5.7 km²).

PERIOD OF RECORD.--Seasonal records only April 1981 to July 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 3,260 ft (994 m), from topographic map.

REMARKS.--Records good.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 25, 1982, reached a stage of 53.65 ft (16.353 m), from floodmarks. A discharge of 42 ft³/s (1.19 m³/s) was measured July 22, 1982.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge during period, 28 ft³/s (0.79 m³/s) at 0045 hours, Oct. 12, gage height, 50.75 ft (15.469 m); minimum daily discharge, 1.9 ft³/s (0.054 m³/s) Oct. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.3					---	2.6	3.6	3.0		
2	1.9	2.4					---	2.6	4.1	2.8		
3	2.0	---					---	2.6	3.9	2.5		
4	2.1	---					---	2.6	3.9	2.3		
5	2.6	---					---	2.6	3.8	2.5		
6	2.1	---					---	2.4	3.3	2.4		
7	2.0	---					---	2.5	3.3	2.3		
8	2.2	---					---	2.5	4.4	2.6		
9	2.0	---					---	2.5	3.5	2.4		
10	2.0	---					---	3.9	3.5	2.3		
11	3.3	---					---	2.7	3.4	2.2		
12	4.7	---					---	2.6	3.2	2.1		
13	2.5	---					---	4.2	3.2	2.1		
14	2.3	---					---	7.1	3.4	2.2		
15	2.3	---					---	8.5	3.7	2.1		
16	2.7	---					---	4.4	4.6	2.1		
17	2.4	---					---	4.2	3.9	2.1		
18	2.3	---					---	3.5	3.4	2.0		
19	2.4	---					---	4.1	3.2	2.1		
20	2.4	---					---	7.7	3.2	2.0		
21	2.5	---					---	5.2	3.1	2.0		
22	2.4	---					---	4.6	2.9	---		
23	2.4	---					---	5.9	2.8	---		
24	2.5	---					---	4.9	2.8	---		
25	2.4	---					---	4.1	2.6	---		
26	2.4	---					---	4.0	2.7	---		
27	2.3	---					---	3.8	2.6	---		
28	2.3	---					---	5.0	2.6	---		
29	2.3	---					---	4.3	2.6	---		
30	2.3	---					2.6	3.9	2.6	---		
31	2.2	---					---	3.7	---	---		
TOTAL	74.1	---					---	125.2	99.8	---		
MEAN	2.39	---					---	4.04	3.33	---		
MAX	4.7	---					---	8.5	4.6	---		
MIN	1.9	---					---	2.4	2.6	---		
AC-FT	147	---					---	248	198	---		

06414000 RAPID CREEK AT RAPID CITY, SD

LOCATION.--Lat 44°05'09", long 103°14'31", in NE¼SE¼SW¼ sec.35, T.2 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on left bank 3,000 ft (914 m) upstream from 12th Street in Rapid City and 3.6 mi (5.8 m) downstream from Canyon Lake Dam.

DRAINAGE AREA.--410 mi² (1,060 km²), approximately.

PERIOD OF RECORD.--June 1903 to November 1906, July 1942 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,230.00 ft (984.504 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 30, 1906, nonrecording gage at site 1 mi (1.6 km) downstream at different datum, and June 10, 1972, to Nov. 1, 1972, nonrecording gage at site 800 ft (244 m) downstream at datum 0.80 ft (0.244 m) higher. July 1942 to June 9, 1972, water-stage recorder at site 300 ft (91 m) downstream at datum 0.80 ft (0.244 m) higher (destroyed by flood).

REMARKS.--Records good except those for winter periods, which are fair. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm³). Flow regulated by Pactola Reservoir 25.4 mi (40.9 km) upstream since Aug. 22, 1956 (see station 06411000). Several observations of water quality were made during the year.

AVERAGE DISCHARGE.--43 years, 61.0 ft³/s (1.728 m³/s), 44,190 acre-ft/yr (54.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) June 9, 1972, gage height, 19.66 ft (5.992 m), from floodmarks, on basis of slope-area measurement of peak flow; minimum, 1.6 ft³/s (0.045 m³/s) Apr. 20, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 13, 1920, reached a stage of 14.4 ft (4.39 m) present datum, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,000 ft³/s (56.6 m³/s) at 0145 hours, July 25, gage height, 8.65 ft (2.637 m); minimum daily discharge, 15 ft³/s (0.42 m³/s) Oct. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	23	20	22	24	24	23	23	50	71	140	104
2	34	23	24	24	23	24	22	21	59	85	138	103
3	25	23	24	23	23	22	21	16	59	150	132	101
4	19	22	21	22	21	22	22	28	60	161	167	101
5	24	22	22	22	21	22	23	42	55	158	132	109
6	17	22	26	20	23	21	23	50	47	168	122	109
7	17	22	26	21	23	23	26	55	45	160	139	105
8	15	21	24	21	22	23	27	57	57	154	120	103
9	17	21	25	21	22	32	24	49	47	162	132	101
10	17	21	26	20	21	27	24	75	45	164	127	99
11	26	21	26	21	21	26	26	62	45	166	125	101
12	37	21	22	21	21	25	25	57	43	154	123	105
13	20	21	25	22	21	24	25	69	43	150	120	102
14	19	21	24	24	25	23	24	89	49	140	120	124
15	19	20	27	23	25	23	23	91	57	144	119	114
16	19	20	23	22	24	22	23	53	74	143	131	111
17	19	19	22	23	30	26	23	45	66	148	137	120
18	19	20	24	24	23	24	24	43	59	150	122	120
19	18	20	23	21	25	25	24	43	52	137	124	120
20	18	20	30	21	31	22	24	70	51	133	120	118
21	21	20	28	21	27	23	24	54	47	124	118	103
22	20	21	25	21	25	24	24	49	42	167	117	81
23	21	20	21	21	26	25	23	65	39	139	119	66
24	21	19	20	22	22	25	23	70	41	130	119	64
25	22	20	21	22	21	21	20	60	39	370	118	61
26	23	20	25	34	21	22	19	52	63	166	115	59
27	23	19	25	28	23	21	19	45	66	155	117	67
28	24	19	22	24	23	21	19	64	59	151	126	69
29	23	21	22	24	---	27	24	72	60	150	132	65
30	23	21	18	24	---	26	22	59	68	144	121	59
31	22	---	19	22	---	23	---	53	---	143	108	---
TOTAL	685	623	730	701	657	738	693	1681	1587	4737	3900	2864
MEAN	22.1	20.8	23.5	22.6	23.5	23.8	23.1	54.2	52.9	153	126	95.5
MAX	43	23	30	34	31	32	27	91	74	370	167	124
MIN	15	19	18	20	21	21	19	16	39	71	108	59
AC-FT	1360	1240	1450	1390	1300	1460	1370	3330	3150	9400	7740	5680

CAL YR 1981 TOTAL 14177.1 MEAN 38.8 MAX 176 MIN 6.7 AC-FT 28120
WTR YR 1982 TOTAL 19596.0 MEAN 53.7 MAX 370 MIN 15 AC-FT 38870

06414700 RAPID CREEK AT EAST MAIN STREET, AT RAPID CITY, SD

LOCATION.--Lat 44°04'45", long 103°12'12", in SE¼NE¼NW¼ sec.6, T.1 N., R.8 E., Pennington County, Hydrologic Unit 10120110, at left downstream corner of bridge on East Main Street.

DRAINAGE AREA.--416 mi² (1,077 km²), revised.

PERIOD OF RECORD.--May 1980 to July 1982 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 3,169.50 ft (966.064 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm²). Flow regulated by Pactola Reservoir 27.4 mi (44.1 km) upstream since Aug. 22, 1956 (see station 06411000). Several observations of water quality were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,080 ft³/s (30.6 m³/s) July 23, 1981, gage height, 10.52 ft (3.206 m); minimum daily discharge, 10 ft³/s (0.28 m³/s) Oct. 7, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1972, reached a stage of about 18.0 ft (5.49 m) present datum, from information by local resident. Flood of July 25, 1982, reached a stage of 12.8 ft (3.90 m), from flood-marks.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 581 ft³/s (16.5 m³/s) at 1525 hours, May 23, gage height, 9.60 ft (2.926 m); minimum daily discharge, 18 ft³/s (0.51 m³/s) Dec. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	21	22	22	24	23	23	27	52	82		
2	38	21	22	24	23	22	23	26	61	91		
3	30	21	24	23	23	21	22	22	60	142		
4	25	22	23	22	21	21	24	28	67	155		
5	34	22	21	22	21	21	25	41	57	160		
6	22	22	25	20	23	22	25	48	50	157		
7	21	22	26	21	23	22	28	49	51	155		
8	22	22	23	21	22	24	31	57	66	153		
9	22	22	23	21	22	36	24	52	48	155		
10	22	22	25	20	21	28	25	91	49	160		
11	45	21	24	21	21	25	27	62	46	158		
12	51	21	22	21	21	25	25	59	44	148		
13	23	21	22	22	21	23	24	86	46	146		
14	22	20	23	24	27	23	24	108	51	139		
15	22	21	24	23	28	24	24	112	61	141		
16	22	21	24	22	25	23	24	55	79	---		
17	22	21	24	23	27	28	22	52	65	---		
18	20	19	26	24	26	26	23	45	57	---		
19	21	20	24	21	27	30	24	58	52	---		
20	23	20	35	21	28	23	25	95	52	---		
21	24	21	31	21	27	26	24	58	49	---		
22	24	22	26	21	26	28	23	52	44	---		
23	23	22	22	21	25	26	23	82	43	---		
24	22	22	21	22	23	24	25	68	45	---		
25	22	22	22	22	23	21	23	60	43	---		
26	23	21	25	38	23	22	23	53	63	---		
27	23	21	24	29	23	22	22	48	67	---		
28	23	21	22	24	24	22	22	71	64	---		
29	24	22	22	24	---	36	28	68	65	---		
30	24	22	18	24	---	28	25	58	73	---		
31	22	---	19	22	---	22	---	53	---	---		
TOTAL	806	638	734	706	668	767	730	1844	1670	---		
MEAN	26.0	21.3	23.7	22.8	23.9	24.7	24.3	59.5	55.7	---		
MAX	51	22	35	38	28	36	31	112	79	---		
MIN	20	19	18	20	21	21	22	22	43	---		
AC-FT	1600	1270	1460	1400	1320	1520	1450	3660	3310	---		

CAL YR 1981 TOTAL 14714 MEAN 40.3 MAX 218 MIN 11 AC-FT 29190

06415500 HAWTHORNE DITCH AT RAPID CITY, SD

LOCATION.--Lat 44°04'29", long 103°11'30", in SE¼SE¼NE¼ sec.6, T.1 N., R.8 E., Hydrologic Unit 10120110, Pennington County, on right bank upstream from Cambell Street.

PERIOD OF RECORD.--August 1946 to September 1953 (monthly discharge for irrigation seasons only, published in WSP 1309 and 1729), May 1981 to July 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 3,160 ft (963 m), from topographic map. Prior to September 1953 at site approximately 1,600 ft (488 m) downstream at different datum. Prior to Oct. 17, 1947, nonrecording gage.

REMARKS.--Records good. Flow completely regulated and is very small during winter months.

EXTREMES FOR CURRENT PERIOD.--Maximum daily discharge during period Oct. 1 to Nov. 2, Apr. 30 to July 24, 21 ft³/s (0.59 m³/s) Oct. 5, gage height, 1.75 ft (0.533 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	5.2					---	.00	.46	8.9		
2	2.7	5.2					---	.00	.29	8.9		
3	14	---					---	.00	2.6	9.5		
4	17	---					---	.00	4.0	6.9		
5	21	---					---	.87	4.2	6.6		
6	16	---					---	1.7	4.2	12		
7	15	---					---	1.9	4.2	12		
8	15	---					---	1.3	3.7	12		
9	12	---					---	.80	2.8	9.4		
10	7.9	---					---	.69	2.6	13		
11	10	---					---	.23	2.2	14		
12	12	---					---	.02	1.8	14		
13	9.6	---					---	.37	1.7	14		
14	9.3	---					---	.66	1.5	14		
15	9.3	---					---	.75	1.7	13		
16	9.3	---					---	.08	1.5	13		
17	9.0	---					---	.05	1.1	13		
18	9.0	---					---	.00	.92	12		
19	9.6	---					---	.09	.81	12		
20	9.8	---					---	.48	.66	11		
21	10	---					---	.04	1.1	12		
22	10	---					---	.00	3.9	17		
23	10	---					---	.31	5.8	19		
24	9.5	---					---	.30	5.8	19		
25	5.5	---					---	.17	5.4	---		
26	5.5	---					---	.00	4.9	---		
27	5.5	---					---	.00	5.9	---		
28	5.2	---					---	1.2	8.5	---		
29	5.2	---					---	1.2	8.6	---		
30	5.2	---					.00	.91	8.8	---		
31	5.2	---					---	.60	---	---		
TOTAL	307.3	---					---	14.72	101.64	---		
MEAN	9.91	---					---	.47	3.39	---		
MAX	21	---					---	1.9	8.8	---		
MIN	2.7	---					---	.00	.29	---		
AC-FT	610	---					---	29	202	---		

06416000 RAPID CREEK BELOW HAWTHORNE DITCH, AT RAPID CITY, SD

LOCATION.--Lat 44°04'00", long 103°10'25", in NW¼NW¼NE¼ sec.8, T.1 N., R.8. E., Pennington County, Hydrologic Unit 10120110, 1.5 mi (2.4 km) downstream from diversion to Hawthorne Ditch on East St. Patrick Street.

DRAINAGE AREA.--418 mi² (1,083 km²), revised.

PERIOD OF RECORD.--August 1946 to October 1953 (monthly discharge only, published in WSP 1309 and 1729), May 1980 to July 1982 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 3,124.18 ft (952.250 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 27, 1947, at site 700 ft (210 m) downstream at datum 0.25 ft (0.076 m) lower, and Nov. 28, 1947, to October 1953, at present site, at different datum.

REMARKS.--Records good except those for winter periods, which are poor. Diversions above station for irrigation of about 3,000 acres (12 km²). Flow regulated by Deerfield Dam on Castle Creek since December 1945 (see station 06409500) and by Pactola Reservoir 30 mi (48 km) upstream since August 1956 (see station 06411000). Several observations of water quality were made during the year.

AVERAGE DISCHARGE.--7 years (1946-53), 62.3 ft³/s (1.764 m³/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1972 reached a stage of 17.1 ft (5.21 m) present datum. Flood of July 25, 1982, reached a stage of 16.7 ft (5.09 m).

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 539 ft³/s (15.3 m³/s) at 1610 hours, May 23, gage height, 12.61 ft (3.844 m); minimum daily discharge, 7.5 ft³/s (0.212 m³/s) Oct. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	16	22	23	24	22	21	25	55	78		
2	33	16	21	25	22	23	22	24	66	85		
3	18	16	22	25	22	23	20	22	61	135		
4	9.6	16	22	22	20	22	21	26	67	151		
5	21	16	19	22	20	26	22	38	57	157		
6	8.1	16	23	20	24	26	23	42	48	153		
7	7.5	17	23	20	25	24	25	44	46	150		
8	8.0	20	22	20	23	23	29	49	68	147		
9	9.9	20	23	20	21	36	23	44	48	153		
10	13	20	20	20	20	28	23	84	50	154		
11	29	19	24	21	20	24	24	54	47	149		
12	57	19	22	21	20	25	23	52	44	140		
13	16	20	23	22	20	22	23	84	46	137		
14	13	20	24	26	29	24	23	115	52	130		
15	12	20	25	24	30	24	22	129	64	132		
16	12	20	25	22	26	23	22	58	79	---		
17	12	20	24	23	27	28	22	56	66	---		
18	10	19	26	23	27	23	23	47	58	---		
19	10	19	25	20	27	28	23	57	54	---		
20	11	19	36	20	26	22	25	106	53	---		
21	13	19	34	20	27	23	24	59	51	---		
22	12	19	27	20	24	25	23	52	45	---		
23	11	19	23	20	25	25	23	88	43	---		
24	11	20	22	23	21	23	23	70	46	---		
25	15	20	23	24	23	20	22	61	43	---		
26	16	20	26	40	23	20	22	56	62	---		
27	15	20	25	30	22	21	20	50	67	---		
28	16	20	23	25	23	21	21	82	61	---		
29	16	20	23	24	---	34	25	73	61	---		
30	16	19	20	24	---	28	24	60	70	---		
31	16	---	20	22	---	22	---	55	---	---		
TOTAL	495.1	564	737	711	663	758	686	1862	1680	---		
MEAN	16.0	18.8	23.8	22.9	23.7	24.5	22.9	60.1	56.0	---		
MAX	57	20	36	40	30	36	29	129	79	---		
MIN	7.5	16	19	20	20	20	20	22	43	---		
AC-FT	982	1120	1460	1410	1320	1500	1360	3690	3330	---		

CAL YR 1981 TOTAL 11759.6 MEAN 32.2 MAX 221 MIN 2.1 AC-FT 23330

06418900 RAPID CREEK BELOW SEWAGE PLANT, NEAR RAPID CITY, SD

LOCATION.--Lat 44°01'24", long 103°05'43", in NW¼NE¼NE¼ sec.25, T.1 N., R.8 E., Pennington County, Hydrologic Unit 10120110, on right bank 80 ft (24 m) downstream from sewage treatment plant effluent and 6.7 mi (10.8 km) southeast of Rapid City.

DRAINAGE AREA.--452 mi² (1,171 km²), approximately.

PERIOD OF RECORD.--October 1981 to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 3,000 ft (914 m), from topographic map.

REMARKS.--Records good. Flow regulated by Pactola Reservoir 40.9 mi (65.8 km) upstream since Aug. 22, 1956 (see station 06411000). Diversions for irrigation of about 7,000 acres (2,830 hm²) above station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,680 ft³/s (47.6 m³/s) at 1130 hours, July 25, gage height, 9.12 ft (2.780 m); minimum daily, 13 ft³/s (0.37 m³/s) Oct. 4, 7-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	23	33	35	30	40	35	33	60	76	125	100
2	21	25	34	35	29	40	33	28	78	86	125	98
3	18	22	36	35	28	39	33	29	73	170	116	135
4	13	22	41	35	28	38	32	24	61	185	181	104
5	20	22	32	33	27	34	34	34	83	185	457	92
6	18	23	36	31	28	38	35	33	56	180	148	86
7	13	22	38	29	32	39	39	36	54	175	306	88
8	13	25	36	31	31	39	43	40	74	175	146	84
9	13	27	37	32	31	45	42	37	72	190	181	96
10	14	26	38	28	31	54	38	72	55	200	151	91
11	16	24	38	25	31	43	39	52	65	180	143	95
12	92	24	37	29	31	42	41	44	52	165	137	102
13	25	24	35	28	32	38	41	74	52	140	132	98
14	20	24	37	31	33	37	38	164	62	121	134	139
15	20	24	35	30	46	38	38	196	79	125	131	124
16	16	24	34	31	44	36	37	96	76	120	153	109
17	15	24	36	31	44	43	37	78	104	125	185	119
18	16	23	35	28	45	42	37	72	67	120	140	109
19	16	23	30	28	43	43	36	59	62	111	142	109
20	17	23	38	28	47	37	38	205	59	101	134	115
21	18	23	44	28	47	36	38	94	58	94	130	104
22	17	23	38	28	42	40	39	73	51	87	129	83
23	16	23	32	28	39	41	39	95	46	195	130	68
24	18	24	33	30	37	38	37	97	47	126	128	64
25	22	24	34	31	37	35	35	77	46	636	127	64
26	22	24	38	50	38	33	36	70	56	214	125	65
27	22	24	38	40	40	33	34	61	60	175	149	70
28	22	24	36	35	40	32	34	96	66	163	144	132
29	22	24	28	30	---	35	36	89	68	158	115	75
30	22	24	31	30	---	64	39	72	72	137	99	77
31	22	---	32	30	---	38	---	64	---	126	105	---
TOTAL	639	711	1100	973	1011	1230	1113	2294	1914	5041	4748	2895
MEAN	20.6	23.7	35.5	31.4	36.1	39.7	37.1	74.0	63.8	163	153	96.5
MAX	92	27	44	50	47	64	43	205	104	636	457	139
MIN	13	22	28	25	27	32	32	24	46	76	99	64
AC-FT	1270	1410	2180	1930	2010	2440	2210	4550	3800	10000	9420	5740

WTR YR 1982 TOTAL 23669 MEAN 64.8 MAX 636 MIN 13 AC-FT 46950

06421500 RAPID CREEK NEAR FARMINGDALE, SD

LOCATION.--Lat 43°56'31", long 102°51'12", in SW¼SW¼SW¼ sec.19, T.1 S., R.11 E., Pennington County, Hydrologic Unit 10120110, on right bank at downstream side of bridge, 2 mi (3.2 km) southeast of Farmingdale and 4.8 mi (7.7 km) downstream from Antelope Creek.

DRAINAGE AREA.--602 mi^2 (1,559 km^2).

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,700 ft (823 m), from topographic map. Prior to Sept. 19, 1947, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Pactola Reservoir 67 mi (108 km) upstream since August 22, 1956 (see station 06411000). Diversions for irrigation of about 10,000 acres (4,050 hm^2) above station.

AVERAGE DISCHARGE.--36 years, 54.7 ft^3/s (1.549 m^3/s), 39,630 acre-ft/yr (48.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,320 ft^3/s (207 m^3/s) June 10, 1972, gage height, 11.85 ft (3.612 m), from floodmarks, from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times in 1949, 1952-56, 1958-63, 1969-71.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,050 ft^3/s (29.7 m^3/s) at 1300 hours, May 20, gage height, 9.17 ft (2.795 m); minimum daily, 9.6 ft^3/s (0.27 m^3/s) Oct. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	29	29	33	30	38	53	29	75	73	122	98
2	19	29	30	36	29	38	45	24	77	79	115	97
3	19	31	32	39	28	38	42	21	95	79	102	93
4	19	31	34	34	28	37	41	18	89	117	103	91
5	14	30	34	32	27	35	41	14	88	136	398	92
6	10	31	33	30	28	36	44	9.9	79	145	197	127
7	23	28	34	29	31	37	45	12	64	145	264	106
8	11	29	39	30	31	38	49	17	65	146	208	92
9	12	31	35	31	31	40	53	25	97	145	154	92
10	13	39	35	30	31	50	49	22	71	151	204	92
11	9.6	36	34	26	31	70	46	53	69	146	161	92
12	41	34	37	28	31	75	44	29	66	140	148	99
13	68	31	32	29	31	70	41	47	67	122	139	106
14	29	31	26	30	32	50	38	197	355	110	134	102
15	22	31	33	29	33	42	36	408	377	107	133	159
16	20	32	25	29	37	39	37	275	139	97	130	120
17	22	34	27	29	40	39	35	114	143	99	186	112
18	18	33	33	28	40	40	34	100	105	94	148	120
19	19	32	31	28	40	40	33	154	80	91	140	115
20	22	31	36	28	40	34	34	534	71	78	136	117
21	25	32	41	28	41	35	36	325	67	65	131	120
22	28	34	40	28	40	50	33	128	64	60	125	101
23	28	33	33	29	38	45	31	95	55	115	124	80
24	29	33	30	30	37	52	29	123	48	108	122	66
25	31	33	32	35	36	36	27	103	48	169	122	60
26	29	33	33	44	36	33	28	88	46	454	115	59
27	35	32	36	50	37	36	29	79	60	219	113	62
28	29	32	31	60	38	39	24	76	67	151	113	121
29	26	31	27	72	---	41	25	175	64	149	153	96
30	27	29	28	60	---	61	28	105	61	142	128	83
31	28	---	30	35	---	66	---	81	---	131	115	---
TOTAL	740.6	955	1010	1079	952	1380	1130	3480.9	2852	4063	4683	2970
MEAN	23.9	31.8	32.6	34.8	34.0	44.5	37.7	112	95.1	131	151	99.0
MAX	68	39	41	72	41	75	53	534	377	454	398	159
MIN	9.6	28	25	26	27	33	24	9.9	46	60	102	59
AC-FT	1470	1890	2000	2140	1890	2740	2240	6900	5660	8060	9290	5890

CAL YR 1981 TOTAL 11232.80 MEAN 30.8 MAX 363 MIN .80 AC-FT 22280
WTR YR 1982 TOTAL 25295.50 MEAN 69.3 MAX 534 MIN 9.6 AC-FT 50170

06422500 BOXELDER CREEK NEAR NEMO, SD

LOCATION.--Lat 44°08'38", long 103°27'16", in SE¼SE¼ sec.12, T.2 N., R.5 E., Lawrence County, Hydrologic Unit 10120111, on right bank at ranch 0.2 mi (0.3 km) upstream from county line, 0.9 mi (1.4 km) downstream from Jim Creek and 4.5 mi (7.2 km) southeast of Nemo.

DRAINAGE AREA.--96 mi² (249 km²), approximately.

PERIOD OF RECORD.--July 1945 to July 1947, May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,320.27 ft (1,316.818 m) National Geodetic Vertical Datum of 1929. July 1945 to July 1947 nonrecording gage at site 100 ft (30 m) upstream at different datum. May 17, 1966, to June 9, 1972, water-stage recorder (destroyed by flood) and June 10, 1972, to Aug. 8, 1972, nonrecording gage, both at site 100 ft (30 m) upstream at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter period and those for period of no gage-height record, Aug. 16 to Sept. 30, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--17 years (water years 1946, 1967-82), 18.4 ft³/s (0.521 m³/s), 13,330 acre-ft/yr (16.4 hm³/yr); median of yearly mean discharges, 18 ft³/s (0.51 m³/s) 13,000 acre-ft/yr (16 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,100 ft³/s (852 m³/s) June 9, 1972, gage height, 20.4 ft (6.22 m), site and datum then in use, 22.0 ft (6.71 m), present site and datum, from floodmarks, from rating curve extended above 600 ft³/s (17.0 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 0.70 ft³/s (0.020 m³/s) Dec. 30, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1911 reached a stage of about 16 ft (4.9 m), present datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 20	0630	*272	7.70	*3.65	1.113	May 23	2145	153	4.33	3.12	0.951

Minimum daily discharge, 1.0 ft³/s (0.03 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	3.5	2.1	1.5	1.3	4.0	8.5	5.2	38	17	10	11
2	2.4	3.4	2.2	1.6	1.2	3.5	8.6	5.2	43	19	10	10
3	2.3	3.4	2.2	1.7	1.1	3.5	6.8	5.0	46	16	12	10
4	2.3	3.4	2.0	1.6	1.1	3.0	6.4	4.8	40	14	12	9.5
5	2.8	3.4	2.1	1.6	1.1	3.0	6.0	4.7	35	14	10	9.5
6	3.0	3.4	2.1	1.5	1.2	3.5	5.5	4.4	33	17	10	9.0
7	2.8	3.1	2.2	1.4	1.5	3.5	4.5	4.4	30	15	10	9.0
8	2.7	3.1	2.4	1.6	1.4	3.5	4.0	4.4	29	14	10	9.0
9	2.7	3.0	2.5	1.5	1.3	4.0	4.0	4.9	27	15	15	9.0
10	2.9	2.9	2.4	1.0	1.4	4.5	5.0	6.4	25	14	13	9.0
11	2.8	2.9	2.5	1.1	1.5	5.0	6.5	9.3	29	14	12	8.5
12	3.6	2.8	3.3	1.3	1.6	7.0	11	7.5	24	13	11	8.5
13	3.7	2.9	2.2	1.4	1.6	8.0	12	8.6	24	13	11	8.5
14	3.6	3.1	2.2	1.6	1.8	8.0	9.2	22	34	12	11	8.5
15	3.3	3.1	2.1	1.5	2.0	7.1	8.5	60	36	12	9.9	8.5
16	3.1	3.0	2.1	1.3	2.2	7.9	7.7	61	30	12	11	8.5
17	2.9	2.9	2.0	1.5	2.3	8.3	6.8	45	27	11	11	8.0
18	2.6	2.9	1.9	1.4	2.5	7.5	6.4	42	32	10	10	8.0
19	2.6	2.8	1.7	1.4	2.6	6.9	6.1	35	26	9.6	13	8.0
20	2.6	2.6	1.8	1.3	3.0	5.5	5.7	165	22	9.2	13	8.0
21	2.7	2.3	1.8	1.3	4.0	5.5	5.9	126	21	9.0	12	8.0
22	3.4	2.2	1.8	1.2	3.5	6.5	6.2	96	21	9.0	11	8.0
23	3.1	2.2	1.8	1.2	2.5	6.0	7.8	93	20	10	11	8.0
24	3.4	2.3	1.7	1.3	2.5	5.0	7.2	107	20	15	10	8.0
25	3.6	2.3	1.7	1.3	2.7	5.5	6.6	87	20	50	10	8.0
26	3.5	2.2	1.8	1.5	3.0	6.0	6.6	72	19	15	10	7.8
27	3.6	2.2	1.7	1.5	3.5	6.1	6.2	61	19	15	10	7.8
28	3.6	2.1	1.7	1.5	4.0	9.1	6.2	59	17	15	12	7.8
29	3.7	2.1	1.6	1.5	---	11	6.0	58	17	10	12	7.8
30	3.7	2.1	1.6	1.5	---	10	5.8	46	17	10	11	7.8
31	3.5	---	1.5	1.4	---	7.1	---	42	---	10	11	---
TOTAL	94.8	83.6	62.7	44.0	59.4	185.0	203.7	1351.8	821	438.8	344.9	257.0
MEAN	3.06	2.79	2.02	1.42	2.12	5.97	6.79	43.6	27.4	14.2	11.1	8.57
MAX	3.7	3.5	3.3	1.7	4.0	11	12	165	46	50	15	11
MIN	2.3	2.1	1.5	1.0	1.1	3.0	4.0	4.4	17	9.0	9.9	7.8
AC-FT	188	166	124	87	118	367	404	2680	1630	870	684	510

CAL YR 1981 TOTAL 1411.4 MEAN 3.87 MAX 23 MIN 1.4 AC-FT 2800
WTR YR 1982 TOTAL 3946.7 MEAN 10.8 MAX 165 MIN 1.0 AC-FT 7830

06423010 BOXELDER CREEK NEAR RAPID CITY, SD

LOCATION.--Lat 44°07'54", long 103°17'54", in NW¼SE¼ sec.17, T.2 N., R.7 E., Pennington County, Hydrologic Unit 10120111, near center span on downstream side of bridge on State Highway 79, and 4.0 mi (6.4 km) northwest of Rapid City.

PERIOD OF RECORD.--May 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,450 ft (1,050 m), from topographic map.

REMARKS.--Records poor. Considerable loss in sinkholes in reach above gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 253 ft³/s (7.16 m³/s) May 18, 1978, gage height, 31.14 ft (9.491 m), from floodmark; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23 ft³/s (0.65 m³/s) May 22, gage height, 30.84 ft (9.400 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	15	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	10	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	8.6	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	35.15	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	1.13	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	15	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	70	.00	.00	.00	.00

CAL YR 1981 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00
WTR YR 1982 TOTAL 35.15 MEAN .096 MAX 15 MIN .00 AC-FT 70

06423500 CHEYENNE RIVER NEAR WASTA, SD

LOCATION.--Lat 44°04'52", long 102°24'03", in NE¼NE¼NW¼ sec.2, T.1 N., R.14 E., Pennington County, Hydrologic Unit 10120111, on left bank at downstream side of highway bridge, 200 ft (61 m) downstream from Chicago and North Western Transportation Co. bridge, 3.0 mi (4.8 m) east of Wasta, and 8.6 mi (13.8 m) downstream from Boxelder Creek.

DRAINAGE AREA.--12,800 mi^2 (33,200 km^2), approximately.

PERIOD OF RECORD.--July 1914 to June 1915, August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309. Records for Feb. 19-28, 1930, published in WSP 701, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 786: Drainage area. WSP 1279: 1930(M), 1931, 1937. See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 2,260.78 ft (689.086 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1940, nonrecording gage at site 50 ft (15 m) upstream; Aug. 1, 1940, to Dec. 3, 1940, nonrecording gage and Dec. 4, 1940, to Sept. 30, 1968, water-stage recorder at present site all at datum 2.00 ft (0.610 m) higher. Oct. 1, 1968, to Sept. 30, 1972, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Angostura Reservoir 108 mi (174 km) upstream (see station 06401000) since October 1949 and by upstream reservoirs on Rapid Creek since August 1956. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--51 years (water years 1929-31, 1935-82), 347 ft^3/s (9.827 m^3/s), 251,400 acre-ft/yr (310 hm^3/yr); median of yearly mean discharges, 290 ft^3/s (8.21 m^3/s), 210,000 acre-ft/yr (259 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 46,300 ft^3/s (1,310 m^3/s) May 6, 1932, gage height, 13.28 ft (4.048 m), present datum, from rating curve extended above 11,000 ft^3/s (312 m^3/s) on basis of an incomplete discharge measurement at gage height 10.65 ft (3.246 m), present datum; maximum gage height observed, 14.5 ft (4.42 m), present datum, June 13, 1915; minimum discharge, 0.6 ft^3/s (0.017 m^3/s) July 27, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1920 reached a stage of 18 ft (5.5 m), present datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,100 ft^3/s (711 m^3/s) at 1430 hours, July 2, gage height, 12.35 ft (3.764 m); maximum gage height, 16.25 ft (4.953 m) Mar. 5 (backwater from ice); minimum daily discharge, 12 ft^3/s (0.34 m^3/s) Jan. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	91	82	26	18	140	156	72	347	482	224	224
2	63	93	86	24	18	120	154	76	316	11200	208	201
3	67	93	80	23	18	110	146	71	312	771	201	186
4	66	93	72	21	17	98	146	63	1160	431	192	177
5	104	95	76	19	16	90	130	61	627	367	371	183
6	351	94	82	16	18	85	103	59	448	345	421	195
7	140	94	80	15	23	110	139	55	633	328	371	217
8	102	96	74	18	20	140	167	52	652	358	450	195
9	90	96	68	14	19	170	189	51	492	332	308	180
10	74	94	66	12	23	220	226	70	338	316	308	180
11	76	99	64	13	27	270	423	217	284	330	292	183
12	80	99	60	15	35	320	233	670	320	296	262	195
13	97	99	52	17	45	380	154	1030	249	288	259	288
14	137	99	50	24	60	540	121	9490	1170	270	616	252
15	115	100	47	21	65	697	105	12400	1600	262	358	527
16	114	99	42	15	70	214	95	7100	1070	255	252	354
17	105	96	36	20	80	184	91	2020	467	237	460	259
18	95	100	33	23	90	290	89	1130	886	241	599	241
19	92	106	31	24	100	214	85	678	1160	231	412	231
20	88	100	43	22	110	621	82	3390	605	220	288	217
21	92	94	40	21	120	882	99	5330	490	211	262	217
22	94	110	37	19	110	229	91	1390	462	195	252	220
23	96	102	34	18	100	294	81	654	420	1420	248	204
24	100	101	33	25	96	289	79	455	337	496	244	183
25	97	102	35	30	100	201	78	453	306	255	241	165
26	97	103	36	35	110	193	77	403	245	582	266	160
27	95	93	35	35	120	206	78	354	294	565	227	157
28	94	116	33	30	130	229	77	1590	433	362	231	1170
29	94	95	32	27	---	548	76	939	531	288	237	398
30	92	78	30	23	---	335	75	686	477	266	259	259
31	90	---	27	19	---	190	---	462	---	234	252	---
TOTAL	3160	2930	1596	664	1758	8609	3844	51471	17131	22434	9571	7818
MEAN	102	97.7	51.5	21.4	62.8	278	128	1660	571	724	309	261
MAX	351	116	86	35	130	882	423	12400	1600	11200	616	1170
MIN	63	78	27	12	16	85	75	51	245	195	192	157
AC-FT	6270	5810	3170	1320	3490	17080	7620	102100	33980	44500	18980	15510

CAL YR 1981 TOTAL 45410 MEAN 124 MAX 1560 MIN 22 AC-FT 90070
WTR YR 1982 TOTAL 130986 MEAN 359 MAX 12400 MIN 12 AC-FT 259800

06425100 ELK CREEK NEAR RAPID CITY, SD

LOCATION.--Lat 44°14'25", long 103°09'03", in NE¼NE¼ sec.9, T.3 N., R.8 E., Meade County, Hydrologic Unit 10120110, on section line near right upstream corner of county road bridge, 1.7 mi (2.7 km) downstream from Morris Creek tributary and 10 mi (16.1 km) north of Exit 61 and I-90 northeast of Rapid City.

DRAINAGE AREA.--190 mi² (492 km²).

PERIOD OF RECORD.--November 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,950 ft (900 m), from topographic map.

REMARKS.--Records fair. Some flow is pumped from stream for irrigation. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,560 ft³/s (44.2 m³/s) May 20, 1982, gage height, 10.79 ft (3.289 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,560 ft³/s (44.2 m³/s) at 1215 hours, May 20, gage height, 10.79 ft (3.289 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	11	1.0	4.0	.00
2	.00	.00	.00	.00	.00	.00	1.2	.00	8.4	.88	3.0	.00
3	.00	.00	.00	.00	.00	.00	.17	.00	7.4	.87	1.0	.00
4	.00	.00	.00	.00	.00	.00	.05	.00	7.4	.71	2.3	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	7.1	.69	2.6	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	5.9	.87	2.7	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	4.2	.57	2.8	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	3.6	1.2	3.0	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	3.1	1.1	3.4	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	2.8	.72	1.4	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	2.8	.54	.50	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	2.7	.39	.10	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	3.2	.30	.02	.00
14	.00	.00	.00	.00	.00	.00	.00	4.0	3.1	.21	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	306	13	.16	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	163	14	.11	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	98	16	.09	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	166	16	.07	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	51	7.9	.03	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	1060	4.5	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	428	3.2	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	108	2.4	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	60	1.9	.12	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	62	1.6	.26	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	54	1.4	30	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	37	1.4	20	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	23	1.5	15	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	26	1.4	10	.00	.00
29	.00	.00	.00	.00	---	.00	.00	101	1.2	9.0	.00	.00
30	.00	.00	.00	.00	---	.00	.00	39	1.1	7.0	.00	.00
31	.00	---	.00	.00	---	.00	---	18	---	5.0	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	1.42	2804.00	161.2	106.89	26.82	.00
MEAN	.000	.000	.000	.000	.000	.000	.047	90.5	5.37	3.45	.87	.000
MAX	.00	.00	.00	.00	.00	.00	1.2	1060	16	30	4.0	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	2.8	5560	320	212	53	.00

CAL YR 1981 TOTAL 36.93 MEAN .10 MAX 16 MIN .00 AC-FT 73
WTR YR 1982 TOTAL 3100.33 MEAN 8.49 MAX 1060 MIN .00 AC-FT 6150

06425500 ELK CREEK NEAR ELM SPRINGS, SD

LOCATION.--Lat 44°14'54", long 102°30'10", in SW¼NW¼ sec.1, T.3 N., R.13 E., Meade County, Hydrologic Unit 10120111, on left bank near downstream end of county highway bridge, 1.4 mi (2.3 km) downstream from Hay Draw, 5.0 mi (8.0 km) southeast of Elm Springs, and 7.0 mi (11.3 km) upstream from mouth.

DRAINAGE AREA.--540 mi² (1,400 km²), approximately.

PERIOD OF RECORD.--July 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,304.49 ft (702.409 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 2, 1976, nonrecording gage, and prior to Feb. 1, 1967, at site 350 ft (107 m) downstream at present datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--33 years, 22.8 ft³/s (0.646 m³/s), 16,520 acre-ft/yr (20.4 hm³/yr); median of yearly mean discharges, 20 ft³/s (0.57 m³/s), 14,500 acre-ft/yr (18 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,540 ft³/s (242 m³/s) Mar. 29, 1952, gage height, 10.61 ft (3.234 m), from floodmarks, site and datum then in use, from rating curve extended above 5,100 ft³/s (144 m³/s); maximum gage height, 12.33 ft (3.758 m) May 21, 1982; no flow for long periods in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 17 ft (5.2 m), at former site, in May 1920, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft³/s (11.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 15	2300	2010	56.9	9.58	2.920	July 25	0530	402	11.4	6.84	2.085
May 21	0630	*5300	150	*12.33	3.758	Aug. 23	2330	1130	32.0	8.28	2.524
May 28	2230	5190	147	12.25	3.734						

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.21	.00	119	1.1	.25	.25
2	.00	.00	.00	.00	.00	.00	.17	.00	77	.93	.25	.25
3	.00	.00	.00	.00	.00	.00	.09	.00	57	.76	.25	.22
4	.00	.00	.00	.00	.00	.00	.10	.00	47	.68	.20	.22
5	.00	.00	.00	.00	.00	.00	.09	.00	37	.42	.18	.22
6	.00	.00	.00	.00	.00	.02	.05	.00	24	.25	.15	.15
7	.00	.00	.00	.00	.00	.05	.05	.00	16	.22	.34	.05
8	.00	.00	.00	.00	.00	.05	.07	.00	14	.20	.25	.02
9	.00	.00	.00	.00	.00	.09	.07	.00	12	.18	.34	.02
10	.00	.00	.00	.00	.00	.10	.05	.00	9.7	.18	.25	.00
11	.00	.00	.00	.00	.00	.13	.05	.00	9.7	.15	.22	.00
12	.00	.00	.00	.00	.00	.11	.03	.00	7.6	.15	.20	.00
13	.00	.00	.00	.00	.00	.07	.02	.11	6.8	.12	.20	.05
14	.00	.00	.00	.00	.00	.00	.00	82	14	.12	.20	.08
15	.00	.00	.00	.00	.00	.00	.00	983	6.1	.10	.18	.22
16	.00	.00	.00	.00	.00	.00	.00	1480	12	.10	.18	.10
17	.00	.00	.00	.00	.00	.07	.00	732	12	.10	.18	.00
18	.00	.00	.00	.00	.00	.07	.00	220	26	.10	1.8	.00
19	.00	.00	.00	.00	.00	.13	.00	250	15	.10	.82	.00
20	.00	.00	.00	.00	.00	.07	.00	2230	13	.08	.20	.00
21	.00	.00	.00	.00	.00	.15	.00	3880	12	.02	.15	.00
22	.00	.00	.00	.00	.00	.07	.00	1570	9.2	.68	.12	.00
23	.00	.00	.00	.00	.00	.25	.00	497	7.2	1.6	55	.00
24	.00	.00	.00	.00	.00	.21	.00	354	5.4	1.7	127	.00
25	.00	.00	.00	.00	.00	.15	.00	213	4.4	144	8.4	.00
26	.00	.00	.00	.00	.00	.13	.00	107	3.5	21	2.7	.00
27	.00	.00	.00	.00	.00	.17	.00	66	2.7	8.0	.84	.00
28	.00	.00	.00	.00	.00	.23	.00	1320	1.9	4.7	.42	.00
29	.00	.00	.00	.00	---	.23	.00	1370	1.3	2.4	.25	.12
30	.00	.00	.00	.00	---	1.5	.00	325	1.1	.88	.20	.12
31	.00	---	.00	.00	---	1.1	---	218	---	.42	.22	---
TOTAL	.00	.00	.00	.00	.00	5.15	1.05	15697.11	583.6	191.40	201.54	2.09
MEAN	.000	.000	.000	.000	.000	.17	.035	513	19.5	6.17	6.50	.070
MAX	.00	.00	.00	.00	.00	1.5	.21	3880	119	144	127	.25
MIN	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.02	.12	.00
AC-FT	.00	.00	.00	.00	.00	10	2.1	31530	1160	380	400	4.1

CAL YR 1981 TOTAL 15.04 MEAN .041 MAX 7.5 MIN .00 AC-FT 30
WTR YR 1982 TOTAL 16821.94 MEAN 46.3 MAX 3880 MIN .00 AC-FT 33490

06427000 KEYHOLE RESERVOIR NEAR MOORCROFT, WY

LOCATION.--Lat 44°22'55", long 104°46'45", in NW¼NW¼ sec.27, T.51 N., R.66 W., Crook County, Hydrologic Unit 10120201, at reservoir dam on Belle Fourche River 12 mi (19 km) northeast of Moorcroft.

DRAINAGE AREA.--2,000 mi² (5,180 km²), approximately.

PERIOD OF RECORD.--March 1952 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to May 15, 1958, and Oct. 1, 1968, to Mar. 13, 1970, nonrecording gages, and May 15, 1958, to Sept. 30, 1968, water-stage recorder, all at present site and datum.

REMARKS.--Reservoir is formed by a zoned earth-fill dam completed by the Bureau of Reclamation Oct. 25, 1952. Storage began Feb. 12, 1952. Inactive storage, between elevations 4,036.0 ft (1,230.17 m) and 4,051.0 ft (1,234.74 m), 7,950 acre-ft (9.80 hm³). Total capacity below elevation 4,099.3 ft (1,249.47 m), crest of spillway, 185,800 acre-ft (229 hm³). Siltation has eliminated dead storage. Figures given herein represent active contents. The reservoir provides flood control and water for irrigation in Wyoming and near Belle Fourche, SD.

COOPERATION.--Records furnished by the Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 200,744 acre-ft (248 hm³) May 21, 1978, elevation, 4,100.38 ft (1,249.796 m); minimum daily contents (since appreciable storage was attained), 6,030 acre-ft (7.43 hm³) Mar. 8, 9, 1955, elevation, 4,046.35 ft (1,233.327 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 54,891 acre-ft (67.7 hm³) June 21-25, elevation, 4,078.18 ft (1,243.029 m); minimum, 33,603 acre-ft (41.4 hm³) Dec. 12-25, elevation, 4,071.51 ft (1,240.996 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents
Sept. 30	4071.92	34705	
Oct. 31	4071.70	34110	-595
Nov. 30	4071.55	33710	-400
Dec. 31	4071.53	33656	-54
CAL YR 1981			-58882
Jan. 31	4071.56	33736	+80
Feb. 28	4072.88	37393	+3657
Mar. 31	4073.34	38735	+1342
Apr. 30	4073.50	39210	+475
May 31	4076.48	48807	+9597
June 30	4078.12	54669	+5862
July 31	4077.56	52621	-2048
Aug. 31	4076.50	48876	-3745
Sept. 30	4076.24	47983	-893
WTR YR 1982			+13278

06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°44'59", long 104°02'49", in NE¼NW¼NW¼ sec.18, T.9 N., R.1 E., Butte County, Hydrologic Unit 10120202, on left bank 0.3 mi (0.5 km) downstream from State line, 3.7 mi (6.0 km) downstream from Oak Creek and 11 mi (18 km) northwest of Belle Fourche, SD.

DRAINAGE AREA.--3,280 mi^2 (8,500 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1946 to current year. Records for water year 1947 incomplete, yearly estimate published in WSP 1729.

GAGE.--Water-stage recorder. Datum of gage is 3,095.7 ft (943.57 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter period, which are poor. Diversions above station for irrigation of about 5,400 acres (2,200 hm^2). Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm^3), 143 mi (230 km) upstream since Oct. 25, 1952. Water-quality records for the station are published in the annual report "Water Resources Data for Wyoming."

AVERAGE DISCHARGE.--36 years, 90.2 ft^3/s (2.554 m^3/s), 65,350 acre-ft/yr (80.6 hm^3/yr); median of yearly mean discharges, 88 ft^3/s (2.49 m^3/s), 63,800 acre-ft/yr (79 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,400 ft^3/s (125 m^3/s) June 18, 1962, gage height, 15.59 ft (4.752 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,750 ft^3/s (106 m^3/s) at 1430 hours, May 20, gage height, 14.17 ft (4.319 m); minimum daily, 2.5 ft^3/s (0.071 m^3/s) Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	12	10	4.0	3.2	9.5	31	24	235	68	127	46
2	14	12	11	4.0	3.1	9.5	31	23	154	59	126	45
3	13	12	11	4.0	3.0	9.0	30	23	119	50	109	45
4	13	12	10	3.5	3.2	9.0	30	22	110	44	99	43
5	13	12	9.9	3.1	3.5	8.5	25	20	230	39	87	41
6	13	11	9.8	2.8	3.7	9.0	27	19	244	36	84	45
7	13	11	9.6	3.0	3.7	10	26	18	214	34	85	42
8	13	11	9.3	3.1	3.5	11	23	18	205	32	85	38
9	13	11	9.0	2.8	3.4	15	25	18	196	31	93	39
10	12	11	9.0	2.6	3.6	25	25	19	150	32	106	40
11	11	11	8.8	2.8	3.8	40	24	20	116	32	101	37
12	13	11	8.4	2.9	4.0	46	23	20	97	32	94	40
13	12	11	8.4	3.0	4.5	50	23	20	82	31	87	47
14	12	11	8.2	3.0	5.0	54	22	25	70	30	86	70
15	14	11	8.2	2.8	5.0	55	21	260	72	28	78	88
16	13	11	7.8	2.5	5.0	50	21	883	124	28	76	57
17	13	11	7.0	2.7	5.5	46	23	903	156	32	76	54
18	12	11	6.4	2.9	6.0	47	24	558	162	32	83	56
19	12	11	6.0	2.9	7.0	45	25	380	144	36	138	49
20	12	11	6.2	2.8	8.0	43	24	2410	122	62	154	36
21	13	10	6.5	2.8	9.0	43	23	2070	107	78	102	30
22	13	11	6.5	2.7	8.5	46	22	2030	94	118	84	26
23	13	14	5.8	2.6	8.5	46	20	1260	86	154	68	24
24	13	11	5.4	2.8	8.5	46	19	698	111	165	51	21
25	14	11	5.0	3.0	9.0	39	19	504	139	392	48	20
26	14	11	5.0	3.4	9.5	40	20	375	149	253	51	18
27	14	11	5.0	3.7	10	38	20	249	141	231	55	19
28	14	10	4.5	3.7	10	47	26	195	118	208	63	18
29	14	10	4.2	3.6	---	50	26	196	96	167	65	18
30	13	10	4.2	3.5	---	45	26	329	80	143	59	18
31	12	---	4.0	3.4	---	37	---	557	---	129	45	---
TOTAL	403	334	230.1	96.4	160.7	1068.5	724	14146	4123	2806	2665	1170
MEAN	13.0	11.1	7.42	3.11	5.74	34.5	24.1	456	137	90.5	86.0	39.0
MAX	15	14	11	4.0	10	55	31	2410	244	392	154	88
MIN	11	10	4.0	2.5	3.0	8.5	19	18	70	28	45	18
AC-FT	799	662	456	191	319	2120	1440	28060	8180	5570	5290	2320

CAL YR 1981 TOTAL 33369.6 MEAN 91.4 MAX 1000 MIN 4.0 AC-FT 66190
WTR YR 1982 TOTAL 27926.7 MEAN 76.5 MAX 2410 MIN 2.5 AC-FT 55390

06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT												
07...	0820	13	1600	--	9.0	--	--	--	--	--	--	--
21...	1515	13	2110	8.0	7.0	4.0	11.4	K8	908	240	75	150
DEC												
02...	1700	11	2550	8.1	.5	2.0	12.4	K1	1165	310	95	180
09...	0900	9.0	2100	--	.0	--	--	--	--	--	--	--
FEB												
03...	1245	3.0	3000	--	.0	--	--	--	--	--	--	--
MAR												
31...	1650	36	--	--	11.0	--	--	--	689	190	52	110
APR												
14...	0900	22	2140	--	17.5	--	--	--	--	--	--	--
MAY												
11...	1710	20	2010	--	11.5	--	--	--	--	--	--	--
JUN												
22...	1410	93	1310	--	26.0	--	--	--	--	--	--	--
JUL												
12...	1700	31	--	--	28.5	--	--	--	962	260	76	180
15...	1510	29	1600	--	30.5	--	--	--	--	--	--	--
21...	1130	79	1830	--	26.0	--	--	--	--	--	--	--
AUG												
04...	0805	89	1370	--	22.5	--	--	--	--	--	--	--
SEP												
09...	1635	42	1600	--	25.0	--	--	--	--	--	--	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	2.2	10	170	1000	20	1.1	3.9	1600	2.2	.00	.030
DEC											
02...	2.4	10	200	1300	14	2.0	5.8	2060	2.8	.02	.110
09...	--	--	--	--	--	--	--	--	--	--	--
FEB											
03...	--	--	--	--	--	--	--	--	--	--	--
MAR											
31...	1.9	6.9	120	740	4.8	.0	4.8	1200	1.6	.10	.240
APR											
14...	--	--	--	--	--	--	--	--	--	--	--
MAY											
11...	--	--	--	--	--	--	--	--	--	--	--
JUN											
22...	--	--	--	--	--	--	--	--	--	--	--
JUL											
12...	2.6	11	180	1100	7.9	.6	9.6	1400	2.0	.00	.000
15...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
AUG											
04...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

K Non-ideal colony count.

06429500 COLD SPRINGS CREEK AT BUCKHORN, WY

LOCATION.--Lat 44°09'14", long 104°04'39", in NW¼ sec.9, T.48 N., R.60 W., Weston County, Hydrologic Unit 10120303, on right shoulder of Cold Springs Creek road, 155 ft (47 m) upstream from centerline of U.S. Highway 85, and 0.5 mi (0.8 km) northeast of Buckhorn.

DRAINAGE AREA.--19.0 mi² (49.2 km²).

PERIOD OF RECORD.--October 1974 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 6,090 ft (1,855 m), from topographic map.

REMARKS.--Records good except those for winter periods and those for period of no gage-height record, Mar. 1 to Apr. 14, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--8 years, 4.71 ft³/s (0.133 m³/s), 3,410 acre-ft/yr (4.20 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13 ft³/s (0.37 m³/s) at 0900 hours, Apr. 1, 1981, gage height, 4.98 ft (1.518 m); maximum gage height, 8.61 ft (2.624 m) Jan. 12, 1978, backwater from ice; minimum daily discharge, 2.0 ft³/s (0.057 m³/s) Mar. 28, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10 ft³/s (0.283 m³/s) at 1700 hours, Aug. 4, gage height, 4.97 ft (1.515 m); maximum gage height, 7.29 ft (2.222 m) Dec. 1 (backwater from ice); minimum daily discharge, 3.1 ft³/s (0.088 m³/s) Jan. 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	4.8	4.7	4.0	4.5	4.5	5.2	4.3	5.2	4.5	5.0	5.4
2	4.3	4.8	4.7	4.0	4.3	4.5	5.0	4.5	5.2	4.5	5.0	4.8
3	4.5	4.8	4.6	4.0	4.1	4.5	4.8	4.5	4.8	4.3	5.0	4.5
4	4.5	4.8	4.7	4.0	3.7	4.1	4.8	4.5	4.6	4.5	6.8	4.4
5	4.8	4.8	5.0	3.9	3.7	4.0	4.8	4.3	4.6	4.6	6.1	4.4
6	4.5	4.8	4.8	3.8	3.8	4.1	4.3	4.3	5.0	4.3	5.9	4.6
7	4.6	4.8	4.6	3.8	3.8	4.5	4.3	4.3	4.8	4.3	5.7	4.6
8	4.6	4.8	4.8	4.1	3.7	4.5	4.5	4.3	4.8	4.3	6.1	4.6
9	4.5	4.8	4.8	4.0	3.5	4.6	4.5	4.3	4.6	4.3	6.5	4.4
10	4.6	4.8	5.0	4.0	3.6	4.4	4.4	4.4	4.6	4.5	6.3	4.4
11	4.9	4.8	5.0	4.3	3.6	4.8	4.4	4.6	4.6	4.5	6.3	4.8
12	4.9	4.8	4.9	4.3	3.7	4.7	4.4	4.8	4.8	4.5	6.3	4.8
13	4.6	4.8	4.9	4.5	3.8	4.7	4.4	4.8	5.0	4.3	5.6	4.5
14	4.8	4.8	4.8	4.6	4.3	4.7	4.4	4.8	5.2	4.3	6.3	4.4
15	4.6	4.8	4.8	4.8	4.5	4.5	4.5	4.6	5.0	4.3	6.3	4.2
16	4.6	4.8	4.8	4.0	4.5	4.7	4.3	4.4	4.8	4.3	5.6	4.4
17	4.6	4.8	4.8	3.4	4.3	4.5	4.1	4.3	4.8	4.3	6.0	4.5
18	4.6	4.8	4.7	3.4	4.5	4.6	4.3	4.1	4.5	4.1	6.0	4.6
19	4.6	4.6	4.7	3.3	4.5	5.8	3.6	3.6	4.6	4.1	4.6	4.8
20	4.6	4.6	4.8	3.2	4.3	6.0	3.5	3.5	4.6	4.1	3.8	4.8
21	4.8	4.8	4.8	3.2	4.3	5.4	3.6	3.5	4.6	4.3	4.8	4.8
22	4.8	4.8	4.8	3.1	4.5	4.8	4.0	4.4	4.6	4.3	5.2	4.8
23	4.8	4.8	4.5	3.1	4.5	4.6	4.5	3.8	4.6	4.5	5.4	4.6
24	4.8	5.0	4.3	3.5	4.5	4.2	3.6	3.5	4.6	4.5	5.8	4.5
25	4.8	5.0	4.5	4.0	4.5	4.4	4.5	4.3	4.5	4.8	5.9	4.5
26	4.8	4.8	4.5	4.5	4.4	4.4	4.5	5.2	4.6	4.8	5.2	4.5
27	4.8	4.4	4.5	4.6	4.3	4.6	4.3	5.2	4.6	4.6	4.6	4.3
28	4.8	4.5	4.4	4.5	4.4	4.8	4.5	5.4	4.6	4.8	4.6	4.3
29	4.8	4.5	4.3	4.3	---	5.0	4.5	5.2	4.3	4.8	4.5	4.3
30	4.8	4.8	4.0	4.3	---	5.6	4.3	5.2	4.3	4.8	4.6	4.3
31	5.0	---	4.0	4.5	---	5.4	---	5.2	---	5.0	5.0	---
TOTAL	144.8	143.0	144.5	123.0	116.1	145.9	130.8	138.1	141.4	138.1	170.8	136.8
MEAN	4.67	4.77	4.66	3.97	4.15	4.71	4.36	4.45	4.71	4.45	5.51	4.56
MAX	5.0	5.0	5.0	4.8	4.5	6.0	5.2	5.4	5.2	5.0	6.8	5.4
MIN	4.3	4.4	4.0	3.1	3.5	4.0	3.5	3.5	4.3	4.1	3.8	4.2
AC-FT	287	284	287	244	230	289	259	274	280	274	339	271

CAL YR 1981 TOTAL 1669.0 MEAN 4.57 MAX 6.3 MIN 3.6 AC-FT 3310
WTR YR 1982 TOTAL 1673.3 MEAN 4.58 MAX 6.8 MIN 3.1 AC-FT 3320

06429905 SAND CREEK NEAR RANCH A, NEAR BEULAH, WY

LOCATION.--Lat 44°31'13", long 104°05'00", in SE¼SW¼ sec.5, T.52 N., R.60 W., Crook County, Hydrologic Unit 10120203, on left bank 1.0 mi (1.6 km) upstream from Bear Gulch, and 1.6 mi (2.6 km) south of Beulah.

DRAINAGE AREA.--267 mi^2 (692 km^2).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,600 ft (1,100 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Feb. 18 to Apr. 8, which are fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--6 years, 24.1 ft^3/s (0.683 m^3/s), 17,460 acre-ft/yr (21.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 514 ft^3/s (14.6 m^3/s) May 16, 1982, gage height, 7.35 ft (2.240 m); minimum daily, 14 ft^3/s (0.40 m^3/s) Jan. 13, 14, Feb. 11-16.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 700 ft^3/s (19.8 m^3/s) June 15, 1976, gage height, 7.77 ft (2.368 m), from slope-area measurement of peak flow at site 3 mi (4.8 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 514 ft^3/s (14.6 m^3/s) at 0245 hours, May 16, gage height, 7.35 ft (2.240 m); minimum daily, 14 ft^3/s (0.40 m^3/s) Jan. 13, 14, Feb. 11-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	17	17	18	16	16	15	16	25	26	24	22
2	16	17	17	18	16	16	16	16	26	26	24	22
3	16	16	17	18	16	16	15	16	26	26	23	22
4	16	17	17	18	16	16	15	16	26	27	23	21
5	16	17	17	18	16	15	15	16	26	27	22	21
6	16	17	17	18	16	15	15	16	26	27	22	21
7	16	17	17	18	16	15	16	16	26	27	22	21
8	16	17	17	18	16	15	16	16	26	27	22	21
9	16	17	17	18	15	15	16	16	26	27	23	21
10	16	16	17	16	14	15	16	16	26	27	22	21
11	16	17	17	15	14	16	17	17	26	28	22	20
12	15	17	17	15	14	16	17	18	26	28	22	20
13	15	17	17	14	14	16	17	20	27	28	22	20
14	15	16	17	14	14	16	17	25	59	28	22	21
15	15	16	17	15	14	16	17	205	48	28	22	20
16	15	16	17	15	14	16	17	322	40	27	22	20
17	15	17	17	16	15	16	16	99	36	26	22	20
18	15	17	17	16	15	15	16	49	35	26	22	20
19	15	17	17	16	15	15	16	30	31	26	22	20
20	15	17	18	16	16	15	16	265	28	26	22	20
21	15	17	19	16	16	15	16	154	26	26	22	20
22	15	17	18	16	16	15	16	66	25	26	21	20
23	15	17	18	16	15	15	16	37	25	26	21	20
24	15	17	18	16	15	15	16	28	25	26	21	20
25	15	17	18	16	15	15	16	26	25	26	21	20
26	16	16	18	16	16	16	16	26	26	26	21	20
27	16	16	18	16	16	16	16	25	26	26	22	20
28	16	16	18	16	16	16	17	25	26	26	22	21
29	16	16	18	16	---	16	16	25	26	25	22	21
30	17	17	18	16	---	16	16	25	26	25	22	21
31	17	---	18	16	---	16	---	25	---	25	22	---
TOTAL	486	501	540	506	427	482	482	1672	871	821	684	617
MEAN	15.7	16.7	17.4	16.3	15.3	15.5	16.1	53.9	29.0	26.5	22.1	20.6
MAX	18	17	19	18	16	16	17	322	59	28	24	22
MIN	15	16	17	14	14	15	15	16	25	25	21	20
AC-FT	964	994	1070	1000	847	956	956	3320	1730	1630	1360	1220

CAL YR 1981 TOTAL 6356 MEAN 17.4 MAX 24 MIN 15 AC-FT 12610
WTR YR 1982 TOTAL 8089 MEAN 22.2 MAX 322 MIN 14 AC-FT 16040

06430000 MURRAY DITCH AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'35", long 104°02'58", in SW¼SW¼ sec.7, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on right bank 15 ft (5 m) downstream from State line and 12 mi (19 km) southwest of Belle Fourche, SD.

PERIOD OF RECORD.--June 1954 to current year (irrigation seasons only prior to October 1959).

GAGE.--Water-stage recorder. Altitude of gage is 3,440 ft (1,050 m), from topographic map.

REMARKS.--Records fair. Ditch diverts water from left bank of Redwater Creek, 2.0 mi (3.2 km) upstream, for irrigation of about 700 acres (283 hm²). Flow maintained during irrigation season only. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 37 ft³/s (1.05 m³/s) July 17, 1973; no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 22 ft³/s (0.62 m³/s) Aug. 2, 10, gage height, 2.47 ft (0.753 m); no flow for long periods.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	2.9	.00	.00	.00	.00	.00	.00	.00	.00	20	18
2	11	2.9	.00	.00	.00	.00	.00	.00	.00	.00	22	17
3	11	2.9	.00	.00	.00	.00	.00	.00	.00	.00	20	17
4	12	2.9	.00	.00	.00	.00	.00	.00	.00	.00	18	17
5	13	2.9	.00	.00	.00	.00	.00	.00	.00	.00	18	17
6	13	2.9	.00	.00	.00	.00	.00	.00	.00	.00	18	17
7	13	2.9	.00	.00	.00	.00	.00	.00	.00	.00	17	17
8	12	2.9	.00	.00	.00	.00	.00	.00	.00	.00	18	16
9	10	2.5	.00	.00	.00	.00	.00	.00	.00	4.3	21	16
10	11	2.5	.00	.00	.00	.00	.00	.00	.00	6.9	22	15
11	11	2.5	.00	.00	.00	.00	.00	.00	.00	5.9	17	12
12	12	2.5	.00	.00	.00	.00	.00	.00	.00	5.2	12	12
13	13	2.0	.00	.00	.00	.00	.00	.00	.00	5.2	11	13
14	17	2.0	.00	.00	.00	.00	.00	.00	.00	4.9	11	14
15	18	2.0	.00	.00	.00	.00	.00	.00	.00	4.7	11	14
16	16	1.5	.00	.00	.00	.00	.00	.00	.00	5.9	11	14
17	8.4	1.5	.00	.00	.00	.00	.00	.00	.00	8.4	10	15
18	5.5	1.0	.00	.00	.00	.00	.00	.00	.00	17	9.0	15
19	5.9	1.0	.00	.00	.00	.00	.00	.31	.00	18	9.4	15
20	10	.50	.00	.00	.00	.00	.00	.00	.00	16	12	15
21	11	.00	.00	.00	.00	.00	.00	.00	.00	13	20	15
22	11	.00	.00	.00	.00	.00	.00	.00	.00	9.2	16	15
23	11	.00	.00	.00	.00	.00	.00	.00	.00	10	13	14
24	8.6	.00	.00	.00	.00	.00	.00	.00	.00	10	7.0	11
25	6.3	.00	.00	.00	.00	.00	.00	.00	.00	13	7.2	11
26	6.7	.00	.00	.00	.00	.00	.00	.00	.00	7.1	6.2	11
27	7.2	.00	.00	.00	.00	.00	.00	.00	.00	19	5.9	12
28	6.8	.00	.00	.00	.00	.00	.00	.00	.00	21	6.4	8.6
29	4.7	.00	.00	.00	---	.00	.00	.00	.00	17	5.9	7.5
30	2.9	.00	.00	.00	---	.00	.00	.00	.00	15	8.2	7.6
31	2.9	---	.00	.00	---	.00	---	.00	---	16	13	---
TOTAL	311.9	44.70	.00	.00	.00	.00	.00	.31	.00	252.70	416.2	418.7
MEAN	10.1	1.49	.000	.000	.000	.000	.000	.010	.000	8.15	13.4	14.0
MAX	18	2.9	.00	.00	.00	.00	.00	.31	.00	21	22	18
MIN	2.9	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.9	7.5
AC-FT	619	89	.00	.00	.00	.00	.00	.6	.00	501	826	830

CAL YR 1981 TOTAL 1760.63 MEAN 4.82 MAX 25 MIN .00 AC-FT 3490
WTR YR 1982 TOTAL 1444.51 MEAN 3.96 MAX 22 MIN .00 AC-FT 2870

06430500 REDWATER CREEK AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34′26″, long 104°02′54″, in NW¼NW¼ sec.18, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on left bank 800 ft (244 m) downstream from State line, 5.7 mi (9.2 km) upstream from Crow Creek, and 12 mi (19 km) southwest of Belle Fourche, SD.

DRAINAGE AREA.--471 mi² (1,220 km²).

PERIOD OF RECORD.--April 1929 to September 1931 and February 1936 to July 1937 (published as "near Beulah, WY"), June 1954 to current year.

REVISED RECORDS.--WSP 1309: 1931(M), 1936-37(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,410 ft (1,040 m), from topographic map. Apr. 25, 1929, to Sept. 30, 1931, and Feb. 28, 1936, to July 31, 1937, nonrecording gage at site 2 mi (3 km) upstream at different datum.

REMARKS.--Records good except those for winter periods, which are poor. Large diversions for irrigation above station. Total flow passing State line may be obtained by adding flow of Murray ditch (see station 06430000). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--30 years, 36.0 ft³/s (1.020 m³/s), 26,080 acre-ft/yr (32.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,440 ft³/s (69.1 m³/s) Aug. 22, 1973, gage height, 12.19 ft (3.716 m), from rating curve extended above 1,000 ft³/s (27 m³/s) on basis of slope-area measurement at gage height 11.95 ft (3.462 m); no flow Aug. 13-15, 1929.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft³/s (4.25 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 16	0445	*646	18.3	*6.36	1.939	May 21	0015	522	14.8	5.75	1.753

Minimum daily discharge, 2.9 ft³/s (0.082 m³/s) July 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	22	26	25	27	25	27	25	43	39	5.8	11
2	12	23	26	23	28	25	28	26	42	40	6.5	10
3	12	24	26	26	27	26	28	26	41	39	9.0	12
4	12	24	26	27	24	26	28	24	41	39	12	14
5	13	21	26	27	25	26	28	24	41	38	12	14
6	14	22	27	25	26	26	28	25	40	34	14	13
7	12	23	28	22	26	26	29	25	40	34	17	11
8	11	23	30	23	26	26	29	26	39	35	18	11
9	12	23	30	24	25	27	27	26	39	32	24	12
10	12	25	30	25	24	27	27	27	38	27	20	15
11	12	28	29	24	22	26	28	26	38	26	23	20
12	12	28	30	23	23	26	28	28	38	28	27	19
13	12	28	30	23	25	26	27	27	38	29	26	19
14	11	28	29	24	25	26	26	34	80	27	23	23
15	10	27	29	26	24	27	26	208	93	22	23	19
16	12	27	29	26	24	27	26	543	73	19	23	18
17	17	27	28	24	23	28	25	382	63	13	24	18
18	19	27	28	24	22	28	25	192	64	2.9	23	19
19	17	27	26	25	22	29	23	121	54	5.2	22	19
20	16	27	26	25	23	29	25	369	47	7.9	18	17
21	16	26	27	23	23	28	23	477	40	9.0	15	17
22	15	26	27	21	24	28	23	417	38	5.6	13	18
23	15	26	26	20	25	28	23	320	38	4.3	17	18
24	20	25	26	22	25	28	24	180	40	4.5	24	17
25	21	25	27	24	25	27	25	130	40	4.0	23	18
26	21	24	27	25	25	28	25	90	40	19	23	20
27	21	23	27	25	25	27	25	70	39	7.3	23	20
28	19	23	26	26	25	28	26	60	40	4.8	23	24
29	20	24	26	27	---	27	25	53	40	6.4	23	26
30	20	24	26	27	---	27	25	47	40	13	14	25
31	22	---	26	27	---	27	---	45	---	9.6	14	---
TOTAL	469	750	850	758	688	835	782	4073	1386	624.5	582.3	517
MEAN	15.1	25.0	27.4	24.5	24.6	26.9	26.1	131	46.2	20.1	18.8	17.2
MAX	22	28	30	27	28	29	29	543	93	40	27	26
MIN	10	21	26	20	22	25	23	24	38	2.9	5.8	10
AC-FT	930	1490	1690	1500	1360	1660	1550	8080	2750	1240	1150	1030

CAL YR 1981 TOTAL 7749.8 MEAN 21.2 MAX 54 MIN 3.1 AC-FT 15370
WTR YR 1982 TOTAL 12316.8 MEAN 33.7 MAX 543 MIN 2.9 AC-FT 24430

06431500 SPEARFISH CREEK AT SPEARFISH, SD

LOCATION.--Lat 44°28'57", long 103°51'40", in SE¼NW¼ sec.15, T.6 N., R.2 E., Lawrence County, Hydrologic Unit 10120203, on right bank in city park in Spearfish, 500 ft (152 m) downstream from fish hatchery and nearest tributary, and 9.8 mi (15.8 km) upstream from mouth.

DRAINAGE AREA.--168 mi² (435 km²).

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP-1116: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,640 ft (1,110 m), from topographic map. Prior to Dec. 5, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for May and June, which are poor. Regulation by fish hatchery and by hydroelectric plant 0.5 mi (0.8 km) upstream causes diurnal fluctuation, but since storage capacity is small, daily flows are not appreciably affected. Upstream diversions out of drainage basin to Whitewood Creek basin by the Homestake Mining Co. average about 10 ft³/s (0.28 m³/s). Figures of daily discharge do not include diversion by Homestake Mining Co. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--Figures of monthly diversion are furnished by Homestake Mining Co.

AVERAGE DISCHARGE.--36 years, 52.3 ft³/s (1.481 m³/s), 37,890 acre-ft/yr (46.7 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,240 ft³/s (120 m³/s) May 15, 1965, gage height, 10.53 ft (3.210 m), from rating curve extended above 520 ft³/s (14.7 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 10.54 ft (3.213 m) June 15, 1976; no flow for part of Oct. 18, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 5, 1904, reached a stage of 7.00 ft (2.134 m), site and datum of former gage near Spearfish, 1 mi (2 km) upstream, drainage area, 157 mi² (407 km²); discharge about 5,000 ft³/s (142 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,110 ft³/s (59.8 m³/s) at 1530 hours, May 22, gage height, 8.81 ft (2.685 m); minimum daily, 12 ft³/s (0.34 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	40	33	22	32	35	42	50	377	57	53	45
2	35	37	36	34	29	35	45	52	287	57	51	45
3	37	35	43	32	23	35	40	54	297	58	50	45
4	36	34	35	32	18	33	41	57	343	57	49	45
5	37	34	37	37	14	30	44	54	297	53	49	45
6	33	33	41	34	19	34	41	52	190	49	50	44
7	35	34	31	38	29	34	44	50	170	52	48	45
8	34	35	24	33	30	36	43	49	132	54	48	45
9	34	34	27	25	23	35	39	48	128	51	47	45
10	35	33	22	12	28	33	41	48	121	51	46	45
11	37	34	23	17	31	33	45	46	117	55	47	44
12	36	35	23	23	31	35	56	46	92	57	48	40
13	35	32	21	30	32	35	56	48	80	58	47	38
14	34	33	20	32	32	35	56	189	39	61	48	42
15	34	35	20	32	30	36	56	983	46	60	48	40
16	33	38	21	18	30	38	54	957	46	58	48	32
17	34	34	20	29	29	35	50	1000	51	54	46	28
18	35	35	14	34	30	37	50	856	50	55	45	29
19	35	33	17	30	30	37	49	826	70	57	45	27
20	34	34	23	31	31	34	46	1180	85	57	45	24
21	35	34	21	27	35	31	46	1210	95	56	45	21
22	34	37	17	24	34	37	45	1430	90	56	46	19
23	34	36	19	20	33	37	49	1030	72	54	45	17
24	34	36	17	26	32	38	49	838	55	52	45	19
25	36	37	22	32	31	34	53	790	62	51	45	34
26	38	39	22	35	33	35	52	868	68	50	45	45
27	39	37	21	32	33	39	48	868	75	51	44	54
28	40	37	16	31	34	40	49	732	74	50	44	66
29	38	37	16	30	---	43	50	457	57	51	44	64
30	40	34	21	30	---	45	50	412	55	52	45	59
31	39	---	24	30	---	41	---	369	---	53	45	---
TOTAL	1104	1056	747	892	816	1115	1429	15649	3721	1687	1451	1191
MEAN	35.6	35.2	24.1	28.8	29.1	36.0	47.6	505	124	54.4	46.8	39.7
MAX	40	40	43	38	35	45	56	1430	377	61	53	66
MIN	33	32	14	12	14	30	39	46	39	49	44	17
AC-FT	2190	2090	1480	1770	1620	2210	2830	31040	7380	3350	2880	2360
(†)	633	621	617	597	586	625	544					389

CAL YR 1981 TOTAL 14396 MEAN 39.4 MAX 88 MIN 14 AC-FT 28550
WTR YR 1982 TOTAL 30858 MEAN 84.5 MAX 1430 MIN 12 AC-FT 61210

† Diversion, in acre-ft, by Homestake Mining Company.

06433000 REDWATER RIVER ABOVE BELLE FOURCHE, SD

LOCATION.--Lat 44°40'02", long 103°50'20", in NW¼SE¼ sec.11, T.8 N., R.2 E., Butte County, Hydrologic Unit 10120203, on right bank at upstream side of bridge on U.S. Highway 212 in Belle Fourche, 0.5 mi (0.8 km) upstream from Hay Creek and 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--920 mi² (2,383 km²).

PERIOD OF RECORD.--November 1945 to current year. Records for water year 1946 incomplete, yearly discharge published in WSP 1309. Prior to October 1960, published as Redwater Creek above Belle Fourche.

REVISED RECORDS.--WSP 1389: 1954 (maximum gage height only).

GAGE.--Water-stage recorder. Altitude of gage is 3,000 ft (910 m), from topographic map. Prior to Dec. 13, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 13,000 acres (5,260 hm²) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 135 ft³/s (3.823 m³/s), 97,810 acre-ft/yr (121 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft³/s (464 m³/s) June 16, 1962, gage height, 11.69 ft (3.563 m), from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1960, 1968-69, 1981-82.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 16	1300	3940	112	8.15	2.484	May 20	0915	*6920	196	8.82	2.688

No flow July 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	137	122	117	102	106	131	129	433	179	16	62
2	98	137	122	120	102	105	132	131	416	170	17	58
3	104	135	124	120	101	105	127	136	404	163	18	57
4	100	135	122	120	100	104	130	136	384	157	19	58
5	100	133	122	122	100	103	131	130	372	146	20	63
6	107	133	122	118	96	105	131	125	352	137	18	71
7	114	135	122	106	96	106	132	124	329	124	19	77
8	114	135	120	100	100	108	139	123	318	116	15	76
9	118	133	122	105	105	112	131	122	303	109	25	80
10	122	131	121	105	105	116	129	133	292	102	33	76
11	122	131	121	104	103	112	132	126	278	92	32	77
12	123	131	118	102	100	114	142	125	271	89	32	80
13	122	131	121	100	100	113	140	126	258	77	31	88
14	126	128	119	98	100	114	142	130	292	50	30	113
15	124	131	120	86	95	118	138	950	376	47	26	125
16	122	128	127	90	100	122	137	3520	304	36	22	116
17	122	128	127	95	108	129	133	3340	318	32	23	116
18	126	128	124	95	110	120	134	1040	318	18	26	114
19	131	128	124	95	110	121	131	888	289	17	32	116
20	131	126	110	97	104	120	129	5790	258	13	32	118
21	135	131	115	100	104	117	133	4600	262	4.7	32	120
22	131	128	124	110	104	121	120	2140	221	.00	32	120
23	135	128	122	110	102	124	116	1110	206	.08	35	118
24	135	131	120	108	104	126	123	763	222	1.3	40	118
25	140	131	120	105	101	128	134	700	215	15	41	120
26	142	128	118	102	105	123	139	638	209	12	41	124
27	142	122	114	96	105	122	130	590	202	13	43	124
28	142	126	110	95	105	129	129	565	178	16	42	126
29	140	124	110	97	---	131	134	541	186	17	54	128
30	137	122	114	99	---	147	132	503	182	17	59	130
31	137	---	114	102	---	137	---	867	---	17	60	---
TOTAL	3838	3905	3711	3209	2869	3652	3957	29941	8668	1987.08	965	2969
MEAN	124	130	120	104	102	118	132	966	289	64.1	31.1	99.0
MAX	142	137	127	122	110	147	142	5790	433	179	60	130
MIN	96	122	110	86	95	103	116	122	178	.00	15	57
AC-FT	7600	7750	7360	6370	5690	7240	7850	59390	17190	3940	1910	5890

CAL YR 1981 TOTAL 32939.35 MEAN 90.2 MAX 155 MIN .00 AC-FT 65340
WTR YR 1982 TOTAL 69667.08 MEAN 191 MAX 5790 MIN .00 AC-FT 138200

06433500 HAY CREEK AT BELLE FOURCHE, SD

LOCATION.--Lat 44°40'01", long 103°50'46", in NW¼SW¼ sec.11, T.8 N., R.2 E., Butte County, Hydrologic Unit 10120203, on right bank at intersection of Tenth Avenue and Jackson Street in Belle Fourche, 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--121 mi² (313 km²).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,005.18 ft (915.979 m) National Geodetic Vertical Datum of 1 (City of Belle Fourche bench mark). Prior to Dec. 8, 1953, nonrecording gage at site 300 ft (91 m) downs m at same datum.

REMARKS.--Records fair except those for winter periods, which are poor. Minor diversion to the stream at times from city reservoir overflow, which enters stream above gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 1.53 ft³/s (0.043 m³/s), 1,110 acre-ft/yr (1.37 hm³/yr); median of yearly mean discharges, 1.0 ft³/s (0.03 m³/s), 720 acre-ft/yr (0.89 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 930 ft³/s (26.3 m³/s) June 19, 1972, gage height, 9.15 ft (2.789 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft³/s (1.42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 16	0230	313	8.86	6.78	2.067	May 20	0730	*926	26.2	*8.93	2.722

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.00	.05	.00	.00	.28	2.3	.85	12	.73	.00	.00
2	.00	.00	.05	.00	.00	.26	1.4	.54	11	.62	.00	.00
3	.00	.00	.03	.00	.00	.21	1.0	.35	9.7	.56	.00	.00
4	.00	.00	.04	.00	.00	.19	.85	.23	8.8	.46	.00	.00
5	.28	.00	.06	.00	.00	.18	.62	.12	8.2	.34	.00	.00
6	.01	.07	.05	.00	.00	.22	.49	.05	7.3	.52	.00	.00
7	.00	.00	.04	.00	.00	.25	.51	.01	6.4	.28	.00	.00
8	.00	.00	.04	.00	.00	.39	.93	.01	8.4	.21	.00	.00
9	.00	.00	.04	.00	.00	.60	.67	.83	9.9	.23	.32	.00
10	.00	.00	.19	.00	.00	.84	.59	1.2	9.0	.25	.04	.00
11	.00	.00	.15	.00	.00	1.2	.78	.56	7.2	.31	.00	.00
12	.03	.00	.14	.00	.00	1.0	1.8	.39	5.3	.40	.00	.00
13	.00	.00	.10	.00	.00	.94	1.6	.63	4.5	.50	.00	.00
14	.17	.00	.04	.00	.00	.86	1.1	21	4.2	.24	.00	.30
15	.05	.00	.06	.00	.00	.82	.83	136	8.2	.14	.00	.07
16	.00	.00	.07	.00	.00	.72	.63	229	3.6	.00	.00	.00
17	.00	.00	.07	.00	.00	.67	.41	91	3.1	.00	.00	.00
18	.00	.00	.05	.00	.00	.55	.31	39	2.9	.00	.55	.00
19	.00	.00	.04	.00	.12	.54	.40	35	2.4	.00	.32	.00
20	.65	.05	.03	.00	.23	.92	.56	523	1.9	.00	.00	.00
21	.59	.05	.04	.00	.21	.54	.41	188	1.6	.00	.00	.00
22	.34	.05	.07	.00	.25	1.2	.31	62	1.3	.00	.00	.00
23	.11	.06	.08	.00	.30	1.7	.26	42	1.8	.00	.00	.00
24	.55	.08	.10	.00	.26	1.7	.21	31	4.7	.10	.00	.00
25	.72	.28	.08	.00	.21	1.7	1.1	25	1.6	.98	.00	.00
26	.54	.16	.06	.00	.17	1.2	.58	22	1.5	.32	.00	.00
27	.28	.17	.02	.00	.20	.94	.51	20	1.3	.14	.00	.05
28	.28	.06	.00	.00	.23	1.6	.61	26	1.0	.00	.00	.56
29	.04	.07	.00	.00	---	2.8	.46	23	.94	.00	.00	.31
30	.00	.03	.00	.00	---	7.2	1.1	17	.77	.00	.00	.25
31	.00	---	.00	.00	---	4.2	---	14	---	.00	.00	---
TOTAL	4.66	1.13	1.79	.00	2.18	36.27	23.33	1549.77	150.51	7.33	1.23	1.54
MEAN	.15	.038	.058	.000	.078	1.17	.78	50.0	5.02	.24	.040	.051
MAX	.72	.28	.19	.00	.30	7.2	2.3	523	12	.98	.55	.56
MIN	.00	.00	.00	.00	.00	.18	.21	.01	.77	.00	.00	.00
AC-FT	9.2	2.2	3.6	.00	4.3	72	46	3070	299	15	2.4	3.1

CAL YR 1981 TOTAL 252.99 MEAN .69 MAX 54 MIN .00 AC-FT 502
WTR YR 1982 TOTAL 1779.74 MEAN 4.88 MAX 523 MIN .00 AC-FT 3530

06434500 INLET CANAL NEAR BELLE FOURCHE, SD

LOCATION.--Lat 44°42'14", long 103°49'23", in NE¼NW¼ sec.36, T.9 N., R.2 E., Butte County, Hydrologic Unit 10120202, on right bank 0.5 mi (0.8 km) downstream from Crow Creek, 0.9 mi (1.4 km) downstream from diversion dam on Belle Fourche River, and 2.5 mi (4.0 km) northeast of Belle Fourche.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly diversions from Inlet Canal between station and reservoir for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,985.22 ft (909.895 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 10, 1946, nonrecording gage, and Dec. 10, 1946, to Nov. 26, 1949, water-stage recorder at site 0.8 mi (1.3 km) upstream at same datum.

REMARKS.--Records good except those for winter period, which are poor. Records show actual diversions to Belle Fourche Reservoir (see station 06435000), from Belle Fourche River and Crow Creek, except for 4,770 acre-ft (5.88 hm³) which was diverted for irrigation from the canal between the station and reservoir.

COOPERATION.--Records of diversion from the canal furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--37 years, 165 ft³/s (4.673 m³/s), 119,500 acre-ft/yr (147 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,410 ft³/s (39.9 m³/s) May 16, 1982; no flow for many days in 1946-49, 1963, 1966, 1971-76, 1978-79, 1982.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	143	138	88	130	150	280	175	702	.00	106	120
2	85	142	135	88	130	161	260	170	528	.00	104	106
3	88	141	135	86	120	161	230	167	459	.00	111	102
4	91	143	133	82	120	151	200	164	419	.00	107	105
5	105	140	132	76	110	144	190	156	492	96	106	104
6	125	141	133	78	120	142	185	149	787	166	100	109
7	121	141	135	81	120	140	180	142	666	135	89	117
8	118	140	133	82	120	137	178	142	536	126	97	117
9	121	140	136	78	120	138	176	145	519	123	119	116
10	125	139	139	76	130	150	174	161	423	119	135	104
11	124	140	135	80	130	146	174	156	373	108	141	97
12	127	141	134	84	140	154	172	149	347	107	135	105
13	125	141	138	84	140	142	170	149	317	94	131	121
14	133	139	134	86	150	151	168	334	328	82	123	165
15	130	142	137	76	150	167	166	1210	514	55	113	221
16	127	141	138	70	150	174	164	1410	522	51	102	196
17	127	141	143	74	160	166	161	1370	17	42	110	173
18	128	142	130	80	160	166	158	1330	.00	23	117	173
19	130	144	115	90	170	164	162	1180	.00	20	129	169
20	135	143	110	90	180	135	159	1400	.00	35	187	160
21	141	142	100	87	180	138	158	1300	.00	60	162	154
22	136	139	98	85	170	151	151	1290	.00	71	129	144
23	139	143	98	85	159	162	148	1310	.00	100	125	147
24	143	144	100	89	146	188	148	1260	.00	121	112	156
25	149	142	98	100	145	168	161	1220	.00	198	103	154
26	149	140	95	110	149	173	171	1050	.00	379	105	154
27	148	133	96	110	146	171	162	889	.00	218	119	170
28	145	138	98	120	144	190	166	893	.00	209	117	183
29	143	137	100	120	---	220	178	849	.00	179	128	183
30	141	137	96	120	---	250	180	665	.00	137	144	179
31	143	---	92	130	---	280	---	876	---	118	134	---
TOTAL	3928	4219	3734	2785	3989	5130	5330	21819	7949.00	3172.00	3740	4304
MEAN	127	141	120	89.8	142	165	178	704	265	102	121	143
MAX	149	144	143	130	180	280	280	1410	787	379	187	221
MIN	85	133	92	70	110	135	148	142	.00	.00	89	97
AC-FT	7790	8370	7410	5520	7910	10180	10570	43280	15770	6290	7420	8540

CAL YR 1981 TOTAL 63431.00 MEAN 174 MAX 1080 MIN 51 AC-FT 125800
WTR YR 1982 TOTAL 70099.00 MEAN 192 MAX 1410 MIN .00 AC-FT 139000

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to current year.
WATER TEMPERATURES: October 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,100 micromhos Feb. 13, 1969; minimum daily, 335 micromhos Feb. 12, 1971.
WATER TEMPERATURES: Maximum daily, 29.0°C July 1, 1971; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
06...	1600	124	1120	8.6	13.0	739	619	210	52
NOV									
04...	1330	137	1080	8.0	6.0	720	520	201	53
DEC									
08...	1530	134	1220	8.2	2.5	731	521	207	52
JAN									
07...	1100	82	1290	8.8	.0	816	596	236	55
FEB									
02...	1745	129	1390	7.7	.0	721	501	213	46
MAR									
17...	1615	165	--	8.1	7.0	726	536	210	49
APR									
15...	1000	167	1430	8.2	11.0	739	549	212	51
MAY									
12...	1600	147	1380	7.7	11.0	761	586	219	52
JUL									
16...	1200	57	1720	7.9	24.0	921	725	260	66
AUG									
04...	1015	106	1430	8.0	22.0	568	397	150	47
SEP									
08...	1700	120	1460	8.2	21.5	726	567	200	55

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
06...	28	8	.5	3.5	120	650	5.9	.4	11
NOV									
04...	24	7	.4	3.1	200	580	10	.4	10
DEC									
08...	24	7	.4	3.0	210	570	11	.4	9.9
JAN									
07...	19	5	.3	2.9	220	580	3.5	.4	12
FEB									
02...	16	5	.3	2.9	220	530	11	.4	11
MAR									
17...	29	8	.5	3.7	190	590	4.6	.3	7.9
APR									
15...	30	8	.5	3.7	190	630	4.8	.3	6.5
MAY									
12...	27	7	.4	3.3	175	580	5.1	.4	8.5
JUL									
16...	74	15	1.1	7.6	196	840	8.5	.5	10
AUG									
04...	110	29	2.1	11	171	630	14	.6	7.7
SEP									
08...	58	15	1.0	5.4	159	670	9.2	.3	8.4

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
OCT								
06...	1030	1.4	345	.19	.060	.050	.010	.03
NOV								
06...	963	1.3	356	.27	.060	.050	.040	.12
DEC								
08...	1000	1.4	362	.21	.100	.030	.020	.06
JAN								
07...	1040	1.4	224	.37	.020	.020	<.020	--
FEB								
02...	964	1.3	336	.33	.030	.030	.030	.09
MAR								
17...	1010	1.4	450	.14	.020	.010	<.010	--
APR								
15...	1050	1.4	473	<.10	<.010	<.010	.010	.03
MAY								
12...	1000	1.4	397	.12	.100	.060	<.010	--
JUL								
16...	1390	1.9	214	.16	.020	<.010	.020	.06
AUG								
04...	1070	1.5	306	<.10	.130	.050	--	--
SEP								
08...	1100	1.5	356	.21	.170	.050	.020	.06

< Less than.

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1440	---	---	---	1270	1310	1290	---	1280	---	1280	1420
2	1450	1320	1360	---	1320	1220	1320	---	---	---	1300	1450
3	---	---	---	---	1320	1290	---	1260	---	---	1380	1460
4	---	1320	1320	1400	1430	1270	---	---	1280	---	1380	1450
5	1400	---	---	---	1400	1310	1310	1260	---	---	1440	1490
6	---	1330	---	1360	---	---	1330	---	---	1210	1440	1490
7	1380	---	1370	---	620	---	---	1260	1210	1210	1430	1450
8	---	---	---	1400	1480	1270	1410	---	1250	1440	1440	1450
9	1390	1310	1320	---	1480	1220	1350	---	---	1450	1440	1470
10	---	---	---	---	1390	---	---	1260	1230	1460	1390	1460
11	---	---	1300	---	1370	1190	---	---	---	1470	1380	1460
12	1360	---	---	1470	---	1290	1380	1360	---	1460	1380	1500
13	---	1320	---	1340	---	---	1330	---	---	1510	1370	1440
14	1330	---	1340	---	---	---	---	1280	---	1530	1390	1390
15	---	---	---	1400	---	1310	1340	920	1170	1720	1380	1400
16	1340	1330	1360	---	473	1250	1300	538	1180	1720	1400	1270
17	---	---	---	---	357	1260	---	706	---	1920	1400	1360
18	---	---	1360	1400	708	1320	---	723	---	1920	1370	1330
19	1380	---	---	2010	---	---	1300	815	---	1950	1320	1360
20	---	1310	---	1390	---	---	1320	355	---	2040	1340	1370
21	1310	---	1300	1290	---	---	---	898	---	2150	1390	1360
22	---	---	---	---	1320	1380	1330	667	---	1950	1270	1350
23	1290	1340	1440	---	---	1300	1380	692	---	2000	1320	1360
24	---	---	---	---	1290	1340	---	790	---	1850	1380	1360
25	---	1380	---	1320	---	1300	---	890	---	1800	1370	1330
26	1330	---	---	1290	1350	1360	1270	---	---	1160	1380	1330
27	---	---	---	1050	---	---	---	1160	---	1320	1440	1340
28	1340	---	1400	1260	---	---	1320	1170	---	1220	1440	1300
29	1340	---	---	---	---	1280	---	1180	---	1270	1400	1290
30	1360	---	---	---	---	1240	1340	1230	---	1260	1440	1290
31	1360	---	---	---	---	1250	---	---	---	1270	1440	---
MEAN	1360	1320	1350	1400	1170	1280	1320	951	1230	1550	1380	1390

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	---	---	---	.0	2.0	4.0	---	12.0	---	25.0	21.0
2	12.0	11.0	1.0	---	.0	.0	4.0	---	---	---	24.0	21.0
3	---	---	---	---	.0	.0	---	19.0	---	---	23.0	22.0
4	---	9.0	1.0	.0	.0	.0	---	---	18.0	---	23.0	23.0
5	11.0	---	---	---	.0	.0	4.0	10.0	---	---	21.0	19.0
6	---	8.0	---	.0	---	---	4.0	---	---	20.0	27.0	17.0
7	11.0	---	7.0	---	.0	---	---	10.0	15.0	19.0	23.0	22.0
8	---	---	---	.0	.0	1.0	4.0	---	16.0	18.0	24.0	24.0
9	10.0	10.0	4.0	---	.0	5.0	4.0	---	---	19.0	21.0	25.0
10	---	---	---	---	.0	---	---	11.0	15.0	18.0	18.0	22.0
11	---	---	3.0	---	.0	4.0	---	---	---	17.0	24.0	23.0
12	10.0	---	---	.0	---	4.0	11.0	10.0	---	17.0	22.0	20.0
13	---	8.0	---	.0	---	---	13.0	---	---	19.0	21.0	15.0
14	10.0	---	.0	---	---	---	---	13.0	---	22.0	22.0	20.0
15	---	---	---	.0	---	5.0	14.0	12.0	16.0	19.0	23.0	17.0
16	10.0	9.0	.0	---	.0	6.0	12.0	10.0	16.0	22.0	24.0	14.0
17	---	---	---	---	.5	5.0	---	12.0	---	19.0	23.0	17.0
18	---	---	.0	.0	.0	4.0	---	12.0	---	20.0	25.0	19.0
19	10.0	---	---	.0	---	---	11.0	12.0	---	21.0	25.0	17.0
20	---	7.0	---	.0	---	---	4.0	12.0	---	22.0	25.0	16.0
21	5.0	---	.0	.0	---	---	---	13.0	---	21.0	24.0	17.0
22	---	---	---	---	4.0	2.0	11.0	11.0	---	20.0	23.0	18.0
23	1.0	5.0	.0	---	---	2.0	12.0	15.0	---	24.0	24.0	19.0
24	---	---	---	---	---	4.0	---	14.0	---	25.0	22.0	18.0
25	---	8.0	---	---	---	6.0	---	15.0	---	24.0	23.0	17.0
26	8.0	---	---	.0	1.0	6.0	8.0	---	---	21.0	22.0	18.0
27	---	---	---	.0	---	---	---	18.0	---	21.0	22.0	17.0
28	12.0	---	.0	.0	---	---	11.0	17.0	---	23.0	23.0	16.0
29	11.0	---	---	.0	---	11.0	---	12.0	---	21.0	21.0	14.0
30	11.0	---	---	---	---	---	10.0	12.0	---	22.0	22.0	12.0
31	10.0	---	---	---	---	5.0	---	---	---	23.0	22.0	---
MEAN	9.5	8.0	1.5	.0	.5	4.0	8.5	13.0	15.5	20.5	23.0	18.5

06435000 BELLE FOURCHE RESERVOIR NEAR BELLE FOURCHE, SD

LOCATION.--Lat 44°44'12", long 103°40'27", in SW¼SE¼ sec.18, T.9 N., R.4 E., Butte County, Hydrologic Unit 10120202, at dam on Owl Creek, 9.8 mi (15.8 km) northeast of Belle Fourche.

PERIOD OF RECORD.--January 1912 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929, adjustment of 1912. Prior to June 6, 1967, nonrecording gage at present site and datum.

REMARKS.--Offstream reservoir formed by earthfill dam. Storage began in May 1910; dam completed in April 1911. Conservation capacity, 185,170 acre-ft (228 hm^3) 1949 survey, between elevations 2,927.0 ft (892.15 m), lowest outlet, and 2,975.0 ft (906.78 m), crest of spillway weir. Dead storage below elevation 2,927.0 ft (892.15 m) 6,800 acre-ft (8.38 hm^3). Figures given herein represent contents above elevation 2,927.0 ft (892.15 m). Water diverted from Belle Fourche River through Inlet Canal (see station 06434500) is stored in Belle Fourche Reservoir for irrigation.

COOPERATION.--Elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 197,400 acre-ft (243 hm^3) Apr. 30, 1919, May 20, 1920, elevation, 2,974.9 ft (906.75 m); minimum observed, -3,000 acre-ft (-3.70 hm^3) Sept. 30, 1936, water was lowered below dead storage level of 2,927.0 ft (892.15 m) by opening holes in crib walls.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 178,370 acre-ft (220 hm^3) June 17-18, elevation, 2,975.0 ft (906.78 m); minimum, 36,100 acre-ft (44.5 hm^3) Oct. 1, elevation, 2,948.4 ft (898.77 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents
Sept. 30	2948.40	36100	
Oct. 31	2951.20	45100	+9000
Nov. 30	2953.50	53875	+8775
Dec. 31	2955.50	62492	+8617
CAL YR 1981			+5705
Jan. 31	2957.10	68860	+6368
Feb. 28	2959.10	78825	+9965
Mar. 31	2961.60	93680	+14855
Apr. 30	2963.40	103940	+10260
May 31	2973.10	163370	+59430
June 30	2974.80	176700	+13330
July 31	2971.10	148300	-28400
Aug. 31	2965.90	112300	-36000
Sept. 30	2963.30	96600	-15700
WTR YR 1982			+60500

06436000 BELLE FOURCHE RIVER NEAR FRUITDALE, SD

LOCATION.--Lat 44°41'27", long 103°44'14", in NW¼NE¼ sec.3, T.8 N., R.3 E., Butte County, Hydrologic Unit 10120202, on right bank 5 ft (2 m) downstream from bridge on U.S. Highway 212, 2.5 mi (4.0 km) northwest of Fruitdale and 8.8 mi (14.2 km) downstream from point of diversion to Belle Fourche Reservoir.

DRAINAGE AREA.--4,540 mi² (11,760 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,925 ft (892 m), from topographic map. Prior to Apr. 9, 1947, nonrecording gage and Apr. 10, 1947, to Oct. 14, 1948, water-stage recorder, at site 100 ft (30 m) upstream at same datum. Oct. 15, 1948, to Dec. 30, 1958, water-stage recorder and Dec. 31, 1958, to Sept. 23, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Keyhole Reservoir since Feb. 12, 1952, usable capacity, 191,600 acre-ft (236 hm³), 180 mi (290 km) upstream. At a point 8.8 mi (14.2 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000) through Inlet Canal (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversions for irrigation of about 60,000 acres (243 km²) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 86.5 ft³/s (2.450 m³/s), 62,670 acre-ft/yr (77.3 hm³/yr); median of yearly mean discharges, 54 ft³/s (1.53 m³/s), 39,100 acre-ft/yr (48 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s (360 m³/s) May 20, 1982, gage height, 14.32 ft (4.365 m); no flow at times in 1945, 1948, 1959-62, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,700 ft³/s (360 m³/s) at 1430 hours, May 20, gage height, 14.32 ft (4.365 m); minimum daily, 1.6 ft³/s (0.045 m³/s) Jan. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	5.0	4.5	2.4	3.0	2.9	5.5	3.2	15	242	11	9.0
2	6.1	5.0	4.5	2.4	2.7	2.9	4.8	3.1	14	230	10	8.0
3	6.1	5.0	4.5	2.3	2.4	2.9	4.6	2.9	13	215	11	7.1
4	6.1	5.0	4.5	2.2	2.2	3.1	4.7	2.7	13	202	9.2	8.2
5	5.8	5.0	4.5	2.1	2.1	3.1	4.3	2.5	14	124	8.3	8.1
6	5.5	5.0	4.3	1.9	2.3	3.1	4.0	2.9	18	20	8.1	9.0
7	5.4	5.0	4.3	1.8	2.4	3.1	4.1	3.3	15	16	8.5	8.6
8	5.3	5.0	4.3	2.2	2.6	3.1	4.1	3.3	12	13	7.0	8.8
9	5.3	5.2	4.3	1.9	2.6	2.8	4.1	3.5	11	12	9.8	8.8
10	5.3	5.8	4.1	1.6	2.6	2.9	4.1	3.5	11	12	11	8.0
11	5.0	5.5	4.0	1.8	2.6	2.9	4.3	3.7	11	12	10	7.0
12	5.5	5.5	3.8	1.9	2.7	3.2	4.8	3.7	10	11	12	6.2
13	5.5	5.2	3.6	2.1	2.7	3.3	5.1	3.7	12	11	12	6.6
14	5.8	5.0	3.3	2.4	2.8	2.7	4.8	5.3	14	9.7	11	6.5
15	6.4	5.0	3.2	2.1	2.9	2.8	4.2	960	29	8.9	11	6.7
16	6.4	5.0	3.3	1.9	2.9	3.8	4.0	4260	14	10	9.6	4.9
17	6.1	4.7	3.5	2.0	2.9	4.2	3.8	2320	184	11	11	4.1
18	6.1	4.7	3.2	2.2	3.1	3.8	3.6	546	504	12	11	3.5
19	6.1	4.7	3.0	2.4	3.7	3.7	3.1	55	490	12	12	2.9
20	6.1	4.7	3.1	2.7	4.0	3.9	3.0	8320	420	8.9	13	2.3
21	6.8	4.7	3.3	2.5	4.6	3.5	3.1	7410	378	7.4	14	2.4
22	6.8	4.7	3.3	2.3	5.5	3.1	3.5	2670	345	5.1	11	3.4
23	6.1	4.7	3.5	2.2	5.5	3.0	3.7	1340	316	3.5	12	3.5
24	6.1	4.3	3.7	2.3	3.8	3.1	3.5	431	563	6.0	12	3.6
25	6.1	4.3	3.8	2.5	3.1	3.1	3.6	110	393	15	8.8	4.7
26	6.1	4.3	3.6	2.6	3.1	3.2	3.9	34	382	13	9.1	6.8
27	6.1	4.3	3.4	2.8	2.9	3.6	4.0	22	374	11	9.3	7.7
28	5.5	4.3	3.0	3.1	2.9	4.1	3.6	31	327	12	8.9	7.7
29	5.2	4.5	2.8	3.3	---	4.1	3.2	36	282	11	7.7	7.2
30	5.0	4.5	2.6	3.4	---	5.6	3.2	20	253	10	7.7	6.2
31	5.0	---	2.4	3.1	---	6.2	---	17	---	9.9	8.3	---
TOTAL	181.1	145.6	113.2	72.4	86.6	106.8	120.3	28629.3	5437	1296.4	315.3	187.5
MEAN	5.84	4.85	3.65	2.34	3.09	3.45	4.01	924	181	41.8	10.2	6.25
MAX	6.8	5.8	4.5	3.4	5.5	6.2	5.5	8320	563	242	14	9.0
MIN	5.0	4.3	2.4	1.6	2.1	2.7	3.0	2.5	10	3.5	7.0	2.3
AC-FT	359	289	225	144	172	212	239	56790	10780	2570	625	372

CAL YR 1981 TOTAL 3048.78 MEAN 8.35 MAX 713 MIN .00 AC-FT 6050
WTR YR 1982 TOTAL 36691.50 MEAN 101 MAX 8320 MIN 1.6 AC-FT 72780

06436170 WHITEWOOD CREEK AT DEADWOOD, SD

LOCATION.--Lat 44°22'48", long 103°43'25", in NW¼NE¼SW¼ sec. 23, T.5 N., R.3 E., Lawrence County, Hydrologic Unit 10120202, on left bank 1,000 ft (305 m) downstream from box culvert where stream leaves city and at the junction of lower Main Street and truck route of highways U.S. 85 and A.H. 14 in Deadwood.

DRAINAGE AREA.--40.6 mi² (105 km²), approximately.

PERIOD OF RECORD.--October 1981 to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 4,500 ft (1,372 m), from topographic map.

REMARKS.--Records fair except those for winter period, and Apr. 23 to May 27, which are poor. Flow regulated by Homestake Mining Co. 3.5 mi (5.6 km) upstream. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,660 ft³/s (75.3 m³/s) at 1030 hours, May 15, gage height, 5.54 ft (1.689 m); minimum daily, 3.5 ft³/s (0.10 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	10	6.8	4.8	4.8	10	18	27	35	31	21	13
2	7.9	12	7.2	5.2	4.6	10	18	27	33	30	20	13
3	7.8	8.5	6.0	5.2	4.4	10	16	28	32	29	20	11
4	9.3	9.6	6.1	5.5	4.0	9.8	15	29	31	28	20	11
5	9.1	8.7	6.7	5.0	4.5	9.9	14	27	30	28	19	14
6	7.6	9.2	8.0	4.5	5.5	11	13	28	28	26	19	14
7	6.9	9.3	7.3	4.8	5.5	9.6	12	27	25	25	17	12
8	7.6	9.6	6.7	5.0	5.0	10	12	29	27	25	16	11
9	7.9	9.2	7.0	4.2	5.0	11	13	32	27	29	22	10
10	8.3	9.0	7.0	3.5	6.0	12	15	35	27	28	19	9.6
11	7.5	9.9	7.0	4.0	8.0	12	22	32	27	26	16	9.6
12	7.5	9.5	7.3	4.5	9.4	13	30	31	27	25	15	11
13	7.9	8.3	7.0	5.0	9.6	12	27	55	33	26	16	13
14	9.0	9.4	7.0	5.5	10	11	29	712	38	25	14	17
15	8.8	8.9	7.0	5.0	11	10	30	1960	42	25	14	24
16	9.0	8.6	7.6	4.0	11	11	29	1500	35	25	15	22
17	9.4	7.3	7.6	5.0	10	12	27	729	50	25	15	18
18	8.9	8.2	7.0	4.8	9.9	13	25	663	49	25	16	15
19	8.9	7.6	6.8	4.8	10	12	22	855	45	24	17	13
20	8.8	7.3	7.6	4.5	12	11	23	1280	42	23	16	13
21	9.2	7.4	7.0	4.4	12	12	23	503	42	23	16	12
22	8.8	7.7	6.5	4.2	12	14	25	283	45	23	16	11
23	9.2	7.1	5.8	4.5	12	14	25	182	43	35	16	10
24	9.5	6.0	6.4	5.0	9.9	13	26	130	41	34	16	9.6
25	9.9	7.1	5.5	5.0	10	13	28	102	41	45	15	10
26	8.2	6.3	5.2	5.5	11	13	27	78	40	33	13	12
27	8.6	5.1	5.0	5.2	10	15	26	71	39	25	14	14
28	8.3	6.7	5.0	5.2	12	16	25	50	34	23	14	18
29	8.7	6.7	4.8	5.0	---	18	27	46	32	23	14	19
30	9.6	6.3	5.0	5.0	---	19	29	41	31	22	14	17
31	9.5	---	4.8	5.0	---	20	---	36	---	21	22	---
TOTAL	265.6	246.5	201.7	148.8	239.1	387.3	671	9628	1071	835	517	406.8
MEAN	8.57	8.22	6.51	4.80	8.54	12.5	22.4	311	35.7	26.9	16.7	13.6
MAX	9.9	12	8.0	5.5	12	20	30	1960	50	45	22	24
MIN	6.9	5.1	4.8	3.5	4.0	9.6	12	27	25	21	13	9.6
AC-FT	527	489	400	295	474	768	1330	19100	2120	1660	1030	807

WTR YR 1982 TOTAL 14617.8 MEAN 40.0 MAX 1960 MIN 3.5 AC-FT 28990

06436190 WHITEWOOD CREEK NEAR WHITEWOOD, SD

LOCATION.--Lat 44°32'30", long 103°34'16", in SE¼NW¼SE¼NE¼ sec.25, T.7 N., R.4 E., Lawrence County, Hydrologic Unit 10120202, on right bank 50 ft (15 m) downstream from county highway bridge, 6.9 mi (11.1 km) northeast of Whitewood.

DRAINAGE AREA.--77.4 mi^2 (200 km^2), approximately.

PERIOD OF RECORD.--October 1981 to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 3,175 ft (968 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Small diversions above station for irrigation of 256 acres (104 ha). Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 70 ft^3/s (1.98 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 9	2015	72	2.04	1.74	0.531	May 20	0145	*3050	86.4	*4.52	1.378
May 15	0730	2370	67.1	4.30	1.311	June 17	1900	93	2.63	1.56	0.475

Minimum daily discharge, 4.0 ft^3/s (0.11 m^3/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	12	10	5.0	7.5	14	24	35	55	35	14	13
2	8.0	12	12	4.5	7.0	13	24	33	52	34	16	9.6
3	8.0	13	11	4.8	7.0	16	22	33	49	33	16	8.3
4	7.6	11	11	5.0	6.5	15	23	34	47	32	16	8.0
5	8.8	10	12	4.5	6.5	19	22	35	44	31	16	7.6
6	8.5	11	13	4.2	7.0	15	21	35	42	30	14	10
7	8.1	12	14	4.5	8.0	18	21	35	39	28	14	9.4
8	7.3	12	14	5.0	7.5	12	19	35	37	27	13	8.2
9	7.3	12	13	4.5	7.5	20	19	38	39	28	17	7.4
10	7.3	12	13	4.0	8.5	18	20	48	40	30	18	6.6
11	6.9	12	13	4.5	10	17	22	40	40	28	15	6.3
12	7.1	12	11	5.0	11	19	34	36	40	26	12	8.3
13	7.5	12	11	5.5	12	17	36	44	40	26	11	8.6
14	8.4	12	9.8	6.0	12	18	33	473	45	24	11	15
15	8.4	13	10	7.0	14	18	34	1340	49	23	10	18
16	8.0	12	8.8	6.0	14	20	35	1180	43	21	9.4	14
17	8.0	12	8.6	7.0	15	19	33	400	57	21	9.8	12
18	9.1	14	8.2	7.5	14	19	33	179	69	21	8.3	11
19	9.7	12	7.8	7.0	14	17	31	109	58	20	7.6	10
20	9.7	11	7.4	6.5	17	15	30	1840	56	19	7.5	9.7
21	14	10	6.6	6.5	17	24	31	780	51	18	6.8	10
22	14	9.8	6.1	7.0	17	20	33	290	52	17	6.6	9.2
23	14	10	4.9	7.5	15	20	33	172	55	18	7.2	8.0
24	14	9.6	4.8	8.0	16	18	33	140	47	30	8.0	8.4
25	14	11	4.9	9.0	21	16	37	120	47	35	8.0	8.8
26	13	12	5.0	10	20	17	37	110	46	31	7.6	9.2
27	13	10	5.0	9.5	15	18	36	100	43	29	7.6	11
28	13	9.6	5.0	9.0	15	21	36	90	42	25	7.6	16
29	13	10	5.0	8.5	---	23	37	76	37	22	7.8	15
30	12	9.2	4.9	8.0	---	32	37	65	36	20	7.3	15
31	12	---	4.8	8.0	---	27	---	60	---	19	15	---
TOTAL	308.4	340.2	275.6	199.0	342.0	575	886	8005	1397	801	348.1	311.6
MEAN	9.95	11.3	8.89	6.42	12.2	18.5	29.5	258	46.6	25.8	11.2	10.4
MAX	14	14	14	10	21	32	37	1840	69	35	18	18
MIN	6.9	9.2	4.8	4.0	6.5	12	19	33	36	17	6.6	6.3
AC-FT	612	675	547	395	678	1140	1760	15880	2770	1590	690	618

WTR YR 1982 TOTAL 13788.9 MEAN 37.8 MAX 1840 MIN 4.0 AC-FT 27350

06436760 HORSE CREEK ABOVE VALE, SD

LOCATION.--Lat 44°39'08", long 103°21'59", in SE¼NE¼SE¼ sec.15, T.8 N., R.6 E., Butte County, Hydrologic Unit 10120202, on left bank 2.6 mi (4.2 km) upstream from Dry Creek, 5.5 mi (8.8 km) upstream from mouth, 3.0 mi (4.8 km) northeast of Vale, and 4.5 mi (7.2 km) southeast of Newell.

DRAINAGE AREA.--462 mi^2 (1,197 km^2), approximately.

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,710 ft (826 m), from topographic map. April 1962 to September 1980, water-stage recorder, at site 2.7 mi (4.3 km) downstream, at different datum.

REMARKS.--Records good except those for winter period, which are poor. Natural flow of stream affected by diversions for irrigation above station and by return flow from Belle Fourche Irrigation Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,700 ft^3/s (501 m^3/s) May 21, 1982, gage height, 24.80 ft (7.559 m); minimum daily, 0.60 ft^3/s (0.017 m^3/s) Jan. 10, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 17	1930	2120	60.0	11.32	3.450
May 21	--	*17700	501	*24.80	7.559
May 30	--	951	26.9	8.33	2.539
June 7	--	2180	61.7	12.60	3.840
June 15	1900	517	14.6	6.50	1.981
June 18	1900	1030	29.2	8.60	2.621
July 26	--	691	19.6	7.32	2.231

Minimum daily discharge, 0.60 ft^3/s (0.017 m^3/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	3.0	2.4	1.6	.82	7.5	196	4.4	195	14	82	48
2	4.7	2.9	2.5	2.0	.74	6.1	103	3.4	114	12	78	48
3	4.5	2.8	2.7	1.7	.66	4.8	59	2.9	93	10	71	54
4	4.0	2.7	2.4	1.4	.64	4.5	40	2.8	64	9.7	63	50
5	4.2	3.3	2.4	1.5	.64	4.9	25	2.5	58	10	62	51
6	4.1	3.3	2.5	1.2	.68	5.8	22	2.4	1050	11	62	54
7	3.5	3.3	2.4	.94	.78	5.4	17	2.2	1670	11	55	51
8	3.5	3.3	2.5	.96	.92	4.9	14	2.1	284	13	53	40
9	3.5	3.2	2.7	.80	.84	5.8	14	2.1	122	10	53	38
10	3.3	3.2	2.7	.60	.76	11	13	3.5	89	11	58	43
11	3.2	3.2	2.7	.66	1.7	18	11	3.4	66	13	53	47
12	3.5	3.2	2.6	.78	1.8	20	10	3.5	54	11	50	48
13	3.5	3.2	2.5	.72	1.9	14	10	3.6	48	13	41	58
14	3.3	3.2	2.3	.90	2.3	14	10	15	44	23	36	60
15	3.3	3.2	2.5	.84	3.1	17	8.6	159	291	26	40	70
16	3.2	3.0	2.4	.78	3.1	37	9.9	943	141	24	34	72
17	3.1	2.8	2.4	.88	4.9	28	13	1860	106	30	36	62
18	2.8	2.9	2.4	1.1	9.7	17	10	1360	544	36	44	51
19	2.7	3.0	2.4	.98	25	9.5	9.3	508	560	40	47	40
20	3.0	3.0	2.7	.96	33	5.9	7.9	1510	236	43	49	36
21	4.0	3.0	2.6	.88	35	8.0	6.4	14000	123	43	47	38
22	4.6	3.0	2.7	.86	32	6.1	5.5	3900	70	40	47	38
23	3.6	3.0	2.6	.98	25	7.1	3.9	1200	44	38	50	34
24	3.5	3.0	2.4	.68	16	8.3	3.4	491	36	49	58	32
25	3.5	3.0	2.2	1.1	15	7.4	3.6	288	27	94	82	34
26	3.5	3.0	2.4	1.4	10	8.1	4.7	171	20	488	198	36
27	3.5	2.7	2.5	1.1	8.3	10	3.7	128	12	463	75	40
28	3.5	2.7	2.4	1.0	5.7	15	4.8	103	9.3	166	61	55
29	3.4	2.7	3.1	.90	---	28	6.6	97	9.3	104	55	55
30	3.1	2.4	3.0	.68	---	141	5.7	764	12	87	53	54
31	3.0	---	2.5	.92	---	213	---	404	---	87	52	---
TOTAL	110.9	90.2	78.7	32.28	240.98	693.1	649.4	27939.8	6191.6	2031.7	1845	1437
MEAN	3.58	3.01	2.54	1.04	8.61	22.4	21.6	901	206	65.5	59.5	47.9
MAX	4.8	3.3	3.1	2.0	35	213	196	14000	1670	488	198	72
MIN	2.7	2.4	2.2	.60	.64	4.5	3.4	2.1	9.3	9.7	34	32
AC-FT	220	179	156	64	478	1370	1290	55420	12280	4030	3660	2850

CAL YR 1981 TOTAL 7207.81 MEAN 19.7 MAX 535 MIN .63 AC-FT 14300
WTR YR 1982 TOTAL 41340.66 MEAN 113 MAX 14000 MIN .60 AC-FT 82000

06436800 HORSE CREEK NEAR VALE, SD

LOCATION.--Lat 44°39'30", long 103°20'17", in SE¼NW¼ sec.13, T.8 N., R.6 E., Butte County, Hydrologic Unit 10120202, on right bank 600 ft (183 m) downstream from Dry Creek, 2.9 mi (4.7 km) upstream from mouth, and 4.0 mi (6.4 km) northeast of Vale.

DRAINAGE AREA.--530 mi² (1,370 km²), approximately.

PERIOD OF RECORD.--Water year 1964 to March 1982.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1969, October 1971 to March 1982 (discontinued).
WATER TEMPERATURES: October 1968 to September 1969, October 1971 to March 1982 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 8,080 micromhos Feb. 1-3, 1969; minimum daily, 550 micromhos June 19, 1976.
WATER TEMPERATURES: Maximum daily, 33.0°C June 29, 1974, July 28, 1978; minimum daily, 0.0°C on many days during winter periods.

CORRECTION.--Water-quality records for this station were published with 06436760 in SD-81-1.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
OCT									
08...	1600	3.6	2800	8.4	15.0	1730	650	330	220
NOV									
06...	1540	3.3	4600	8.3	5.5	1952	1662	320	280
DEC									
09...	1545	2.6	4000	8.3	.0	2217	1837	360	320
JAN									
07...	1400	.94	4200	8.0	.0	1891	1641	180	350
FEB									
11...	1400	1.6	6000	7.6	.0	2656	2136	470	360

DATE	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT									
08...	400	33	4.3	13	1080	1900	58	.4	3.4
NOV									
06...	550	38	5.5	11	290	2600	92	.3	2.4
DEC									
09...	650	39	6.1	10	380	3000	100	.3	3.5
JAN									
07...	700	44	7.1	12	250	3500	25	.4	5.4
FEB									
11...	740	38	6.4	12	520	3400	110	.4	8.7

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
OCT								
08...	3580	4.9	34.4	.24	.030	.030	<.010	--
NOV								
06...	4030	5.5	35.9	.73	.070	<.010	<.010	--
DEC								
09...	4670	6.4	32.8	.24	.030	<.010	<.010	--
JAN								
07...	4930	6.7	12.5	1.3	.020	.020	<.020	--
FEB								
11...	5420	7.4	23.3	1.6	<.010	.010	.010	.03

< Less than.

06436800 HORSE CREEK NEAR VALE, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3770	---	6150	---	6000	---	6200	---	---	---	---	---
2	3900	---	6450	---	6150	4650	6150	---	2560	---	---	---
3	3950	---	6700	---	6000	4700	5900	---	2550	---	---	---
4	3940	4300	---	---	5750	4800	---	---	2250	---	---	---
5	4020	4300	---	6550	5680	4750	5900	---	2230	2030	---	---
6	4000	4400	---	6300	5700	4800	6000	---	2130	2040	2280	---
7	4190	4480	---	6200	5900	4900	5850	---	2340	2040	2290	---
8	4180	4650	---	6350	---	4800	5850	---	2320	2040	---	---
9	---	4600	---	6400	---	4600	5700	7600	---	2260	---	---
10	4400	4500	6250	6500	---	4630	5750	7700	2170	2150	---	---
11	4600	4900	---	6800	---	4720	5800	7500	2070	---	2290	---
12	4600	4550	---	6800	5600	4830	---	7400	2090	---	2280	---
13	4550	4650	6500	6850	5600	---	5900	7400	---	1910	2280	---
14	4600	5000	---	6500	---	5840	6000	13500	---	1910	2250	---
15	---	---	---	---	---	---	5700	13500	---	1950	2270	---
16	---	---	---	6200	---	5800	5800	---	---	---	2050	2000
17	---	5400	---	6100	---	5820	5800	---	1920	1340	2050	2000
18	---	5500	---	---	5600	5530	5800	---	1830	1340	1870	---
19	1920	5400	---	5850	5600	5500	---	4500	1950	---	---	---
20	2000	5560	---	5950	---	5820	5700	4500	2120	---	---	---
21	2570	5550	7250	6000	---	5900	5780	---	2410	---	---	1940
22	2570	5500	7250	6000	5150	6300	---	---	2440	1780	1870	1940
23	2850	---	---	5900	5100	6250	5730	---	2600	1890	1870	2000
24	2650	5900	---	---	5200	6300	5800	3280	2790	1900	---	---
25	3420	---	---	5900	5550	6300	5750	3280	2790	---	1840	3040
26	3410	5700	---	6000	5350	---	5600	3440	---	1060	---	3010
27	3710	5600	---	6300	5300	---	5700	---	2060	1040	---	3020
28	3730	5620	6700	6750	4500	---	5600	---	1900	1180	1840	---
29	---	5900	6600	6700	---	---	5600	---	1550	1500	1840	3010
30	---	5900	---	6550	---	6200	---	---	1680	1500	---	3010
31	---	---	---	6100	---	6200	---	---	---	1530	---	---
MEAN	3640	5120	6650	6310	5540	5410	5820	6970	2220	1720	2080	2500

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	---	.0	---	.0	---	13.0	---	---	---	---	---
2	12.0	---	.0	---	.0	6.0	14.0	---	20.0	---	---	---
3	14.0	---	.0	---	.0	7.0	9.0	---	20.0	---	---	---
4	15.0	5.0	---	---	.0	7.0	---	---	23.0	---	---	---
5	15.0	6.0	---	.0	.0	8.0	14.0	---	24.0	27.0	---	---
6	16.0	6.0	---	.0	.0	5.0	12.0	---	24.0	27.0	24.0	---
7	15.0	6.0	---	.0	.0	5.0	10.0	---	23.0	29.0	24.0	---
8	15.0	6.0	---	.0	---	7.0	11.0	---	21.0	26.0	---	---
9	---	5.0	---	.0	---	8.0	12.0	14.0	---	25.0	---	---
10	10.0	5.0	.0	.0	---	9.0	12.0	19.0	21.0	27.0	---	---
11	9.0	4.0	---	.0	---	10.0	14.0	15.0	21.0	---	25.0	---
12	9.0	4.0	---	.0	.0	11.0	---	16.0	20.0	---	26.0	---
13	10.0	3.0	.0	.0	.0	---	14.0	17.0	---	27.0	26.0	---
14	9.0	1.0	---	.0	---	10.0	14.0	17.0	---	27.0	27.0	---
15	---	---	---	---	---	---	15.0	17.0	---	27.0	26.0	---
16	---	---	---	.0	---	8.0	18.0	---	---	---	24.0	16.0
17	---	.0	---	.0	---	8.0	19.0	---	19.0	26.0	25.0	15.0
18	---	.0	---	---	1.0	8.0	19.0	---	20.0	24.0	24.0	---
19	7.0	.0	---	.0	1.0	9.0	---	17.0	22.0	---	---	---
20	7.0	.0	---	.0	---	8.0	15.0	17.0	21.0	---	---	---
21	7.0	1.0	.0	.0	---	9.0	15.0	---	21.0	---	---	16.0
22	5.0	.0	.0	.0	4.0	11.0	---	---	24.0	23.0	23.0	15.0
23	3.0	---	---	.0	4.0	10.0	17.0	---	27.0	22.0	23.0	15.0
24	2.0	.0	---	---	4.0	10.0	21.0	19.0	27.0	23.0	---	---
25	2.0	---	---	.0	4.0	13.0	21.0	20.0	27.0	---	23.0	14.0
26	1.0	.0	---	.0	5.0	---	21.0	21.0	---	16.0	---	14.0
27	1.0	.0	---	.0	3.0	---	15.0	---	23.0	17.0	---	12.0
28	2.0	.0	.0	.0	6.0	---	16.0	---	21.0	18.0	22.0	---
29	---	.0	.0	.0	---	---	17.0	---	23.0	24.0	22.0	11.0
30	---	.0	---	.0	---	9.0	---	---	26.0	25.0	---	12.0
31	---	---	---	.0	---	8.0	---	---	---	27.0	---	---
MEAN	8.5	2.5	.0	.0	2.0	8.5	15.0	18.0	22.5	24.5	24.5	14.0

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD

LOCATION.--Lat 44°30'47", long 103°08'11", in SE¼NW¼ sec.3, T.6 N., R.8 E., Meade County, Hydrologic Unit 10120202, on right bank near upstream end of bridge on State Highway 34, 0.5 mi (0.8 km) upstream from Bear Butte Creek and 20 mi (32 km) northeast of Sturgis.

DRAINAGE AREA.--5,870 mi^2 (15,200 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,526.13 ft (769.964 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 31, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm^3), 246 mi (396 km) upstream since February 1952. At a point 75 mi (121 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal (see station 06434500), with other small diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km^2) above station.

AVERAGE DISCHARGE.--37 years, 274 ft^3/s (7.760 m^3/s), 198,500 acre-ft/yr (245 hm^3/yr); median of yearly mean discharges, 228 ft^3/s (6.46 m^3/s), 165,000 acre-ft/yr (203 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,400 ft^3/s (1,030 m^3/s) May 21, 1982, gage height, 19.10 ft (5.822 m); no flow for many days in 1945, 1950, and Aug. 9, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36,400 ft^3/s (1,030 m^3/s) at 1415 hours, May 21, gage height, 19.10 ft (5.822 m); minimum daily, 3.6 ft^3/s (0.102 m^3/s) Jan. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	43	49	8.0	9.8	42	1100	70	756	366	352	293
2	59	41	48	6.8	9.6	44	640	68	509	361	357	306
3	56	41	48	6.2	9.0	43	292	62	417	348	348	306
4	53	41	36	5.8	8.0	42	167	55	403	343	334	310
5	50	41	34	5.4	8.4	42	133	57	368	357	330	306
6	54	55	32	4.7	11	40	107	58	2630	334	348	302
7	59	71	33	4.0	12	45	96	55	3980	262	339	314
8	57	66	32	4.1	14	50	168	53	1210	225	343	352
9	55	66	31	3.6	17	53	104	50	550	197	379	343
10	55	64	32	4.0	20	56	103	62	382	194	460	318
11	50	62	31	4.2	23	60	109	70	303	183	451	290
12	50	62	29	4.4	26	64	141	68	251	183	398	282
13	48	64	28	4.2	30	70	141	75	197	177	361	286
14	48	64	25	4.2	32	68	126	314	167	171	266	334
15	48	66	26	4.0	33	68	108	5600	1570	180	225	406
16	46	64	28	4.1	34	70	97	10400	2420	177	254	411
17	45	62	22	4.4	40	66	91	8170	642	180	229	366
18	43	62	19	4.6	42	68	91	4330	1750	204	243	334
19	43	62	18	4.9	44	68	91	1570	2140	228	293	290
20	43	60	18	4.9	44	64	88	13500	1160	290	274	246
21	43	58	16	4.7	43	60	83	29700	826	290	246	222
22	43	62	15	4.6	40	58	81	13900	656	298	278	211
23	55	66	16	5.0	39	68	68	5800	556	294	302	197
24	62	60	17	6.0	37	80	68	3450	490	310	370	174
25	62	60	17	7.0	35	90	68	1440	674	456	334	174
26	60	58	16	11	39	100	70	1300	524	696	384	183
27	53	56	14	14	41	160	70	1020	496	960	366	201
28	53	54	14	13	42	280	68	997	478	658	334	250
29	50	52	12	12	---	500	70	2820	429	456	322	266
30	48	52	11	11	---	1000	70	1260	388	379	318	262
31	43	---	9.4	10	---	1400	---	1440	---	366	306	---
TOTAL	1596	1735	776.4	194.8	782.8	4919	4709	107814	27322	10123	10144	8535
MEAN	51.5	57.8	25.0	6.28	28.0	159	157	3478	911	327	327	285
MAX	62	71	49	14	44	1400	1100	29700	3980	960	460	411
MIN	43	41	9.4	3.6	8.0	40	68	50	167	171	225	174
AC-FT	3170	3440	1540	386	1550	9760	9340	213800	54190	20080	20120	16930

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CAL YR 1981   TOTAL    45847.1   MEAN 126   MAX   2220   MIN 4.8   AC-FT   90940
WTR YR 1982   TOTAL   178651.0   MEAN 489   MAX  29700   MIN 3.6   AC-FT  354400
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06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-58, 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1954 to September 1958, October 1968 to September 1971, October 1973 to current year.
WATER TEMPERATURES: August 1954 to September 1958, October 1968 to September 1971, October 1974 to current year.

REMARKS.--Samples collected once daily by observer.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 7,000 micromhos May 16, 1981; minimum daily, 650 micromhos Feb. 15, 1971.
WATER TEMPERATURES: Maximum daily, 30.5°C July 5, 1981; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed daily, 4,000 micromhos Jan. 19; minimum observed daily, 730 micromhos May 22.
WATER TEMPERATURES: Maximum observed daily, 28.0°C Aug. 21; minimum observed daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
08...	1200	57	1340	8.2	15.0	1301	1181	290	140
NOV									
06...	1135	42	2625	8.2	5.0	1242	1052	250	150
DEC									
03...	1330	48	2400	8.3	.5	1440	1200	280	180
JAN									
07...	1530	3.4	3300	8.5	.0	2096	1666	460	230
FEB									
11...	1145	23	2920	7.8	.0	1549	1189	340	170
APR									
15...	1600	107	2620	8.3	15.0	1035	855	200	130
MAY									
17...	1215	9360	860	7.4	14.5	318	239	84	26
JUN									
24...	1115	506	1640	--	17.0	792	608	190	77
JUL									
13...	1145	186	2300	7.9	27.0	1135	964	240	130
AUG									
12...	1200	405	1670	--	22.0	792	638	190	77
SEP									
08...	1130	337	1780	8.0	23.0	827	668	200	79

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
08...	160	21	2.0	12	120	1400	38	.6	4.7
NOV									
06...	190	25	2.4	11	190	1400	41	.7	4.0
DEC									
03...	240	26	2.8	10	240	1700	36	.6	5.6
JAN									
07...	320	25	3.1	13	430	2200	40	.7	7.8
FEB									
11...	210	23	2.4	14	360	1500	34	.6	9.6
APR									
15...	220	31	3.1	11	180	1300	32	.4	4.7
MAY									
17...	58	28	1.5	7.4	79	330	7.6	.4	8.4
JUN									
24...	89	19	1.4	6.7	184	780	13	.4	8.0
JUL									
13...	140	21	1.9	10	171	1200	14	.5	5.2
AUG									
12...	100	21	1.6	8.7	154	820	13	.5	5.0
SEP									
08...	100	21	1.6	8.2	159	860	14	.3	4.6

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
OCT										
08...	1200	57	--	440	--	--	--	--	--	--
NOV										
06...	1135	42	--	420	--	--	--	--	--	--
DEC										
03...	1330	48	--	470	--	--	--	--	--	--
JAN										
07...	1530	3.9	--	630	--	--	--	--	--	--
FEB										
11...	1145	23	--	470	--	--	--	--	--	--
APR										
15...	1600	107	--	320	--	--	--	--	--	--
MAY										
17...	1215	9360	13	140	<1	<1	<1	<1	200	<1
JUN										
24...	1115	506	--	260	--	--	--	--	--	--
JUL										
13...	1145	184	--	310	--	--	--	--	--	--
AUG										
12...	1200	405	--	240	--	--	--	--	--	--
SEP										
08...	1130	347	11	260	<1	1	<1	3	19	<1

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
OCT								
08...	2120	2.9	326	.82	.010	.010	<.010	--
NOV								
06...	2200	2.9	249	8.1	.070	<.010	<.010	--
DEC								
03...	2610	3.5	339	5.0	.120	<.010	<.010	--
JAN								
07...	3560	4.8	37.5	4.4	.020	.010	<.020	--
FEB								
11...	2500	3.4	157	1.8	<.010	.010	<.010	--
APR								
15...	2020	2.7	584	3.7	<.010	<.010	.020	.06
MAY								
17...	574	.77	14500	.69	.750	.050	.020	.06
JUN								
24...	1280	1.7	1750	.89	.100	.090	.040	.12
JUL								
13...	1850	2.5	919	1.5	.010	.010	.020	.06
AUG								
12...	1310	1.8	1430	.86	.050	.030	.020	.06
SEP								
08...	1370	1.9	1250	.68	.140	.030	<.010	--

< Less than.

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT										
08...	--	--	--	--	--	--	--	--	--	--
NOV										
06...	--	--	--	--	--	--	--	--	--	--
DEC										
03...	--	--	--	--	--	--	--	--	--	--
JAN										
07...	--	--	--	--	--	--	--	--	--	--
FEB										
11...	--	--	--	--	--	--	--	--	--	--
APR										
15...	--	--	--	--	--	--	--	--	--	--
MAY										
17...	53	86	.8	2	<1	4	<1	710	<1.0	130
JUN										
29...	--	--	--	--	--	--	--	--	--	--
JUL										
13...	--	--	--	--	--	--	--	--	--	--
AUG										
12...	--	--	--	--	--	--	--	--	--	--
SEP										
08...	95	21	<.1	3	5	4	<1	2400	<1.0	16

< Less than.

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2350	2700	3160	3500	3220	2370	1280	2330	1480	1670	1790	1870
2	2370	2670	2950	3410	3100	2350	1400	2290	1930	1680	1710	1880
3	2340	2690	3050	3450	3080	2310	2200	2250	2400	1700	1750	1920
4	2340	2590	3000	3470	3070	2420	2100	2260	2610	1710	1730	1920
5	2350	2630	2980	3610	2950	2430	2260	2230	2520	1780	1800	1850
6	2350	2610	2980	3660	2880	2600	2280	2230	2660	2170	1770	1750
7	2320	2530	3050	3780	2810	2670	2320	2160	796	1830	1760	1800
8	2370	2600	2760	3800	2740	2620	2020	2150	998	2070	1790	1750
9	2340	2700	2700	3800	2780	2720	2510	2080	1420	2050	1750	1740
10	2350	2600	2600	3710	2880	2700	2510	2020	1820	2070	1750	1730
11	2370	2650	2620	3710	2880	2140	2700	2030	2130	2020	1700	1790
12	2360	2620	2650	3960	2890	1640	3010	2050	2330	2110	1630	1820
13	2420	2600	2700	3710	2830	2000	2980	2260	2440	2130	1720	1860
14	2430	2600	2870	3680	2800	1780	2800	2200	2550	2280	1780	1810
15	2470	2620	2970	3680	2760	1670	2580	1680	2600	2180	1900	1750
16	2520	2600	3100	3780	2700	1550	2600	1020	756	2240	1910	1690
17	2520	2680	---	3870	2600	1800	2520	821	1240	2380	1930	1700
18	---	2610	---	3800	2500	2050	2480	869	1380	2400	1880	1710
19	2570	2610	---	4000	1900	2000	2570	1040	1140	2260	1970	1770
20	2550	2690	---	3870	1660	2130	2460	923	1250	2070	2020	1800
21	2530	2610	---	3660	2280	2350	2500	739	1330	1970	1890	1840
22	2530	2620	---	3600	2170	2320	2480	730	1430	1970	1900	1890
23	2530	2630	---	3500	2430	2320	2500	921	1520	1940	1870	1900
24	2620	2670	---	3470	2730	2070	2560	1020	1560	1930	1770	1900
25	2630	2600	---	3410	2500	1950	2530	1340	1570	1880	1800	1970
26	2650	2600	---	3330	2230	2400	2380	1630	1470	1780	1920	1920
27	2660	2650	---	3170	2360	2480	2280	1870	1380	1560	1930	1920
28	2600	2610	---	3110	2410	2390	2230	2050	1540	1310	1670	1870
29	2650	2880	---	3070	---	1840	2250	1160	1600	1530	1770	1850
30	2610	2960	---	3000	---	1300	2360	1650	1620	1670	1850	1910
31	---	---	---	3030	---	1020	---	1260	---	1780	1790	---
MEAN	2480	2650	2880	3570	2650	2140	2400	1650	1720	1940	1810	1830

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	6.0	.0	.0	.0	.0	7.0	19.0	12.0	20.0	23.0	19.0
2	8.0	5.0	.0	.0	.0	.0	5.5	23.0	14.0	20.0	23.5	18.0
3	13.0	5.0	.0	.0	.0	.0	4.0	16.0	12.5	21.0	22.0	18.0
4	9.0	5.0	.0	.0	.0	.0	1.0	14.0	15.0	21.5	22.0	18.0
5	10.0	4.5	.0	.0	.0	.0	5.0	10.0	16.0	22.0	21.5	19.5
6	5.5	1.0	.0	.0	.0	.0	2.0	9.0	17.0	21.0	23.0	17.0
7	13.0	1.5	.0	.0	.0	.0	1.5	10.0	11.0	20.0	22.0	18.5
8	12.0	3.0	.0	.0	.0	.0	1.0	13.0	14.0	21.0	22.0	18.0
9	8.0	.0	.0	.0	.0	.0	2.0	17.5	12.0	20.0	21.0	19.0
10	7.0	1.0	.0	.0	.0	.0	7.0	13.0	14.5	19.0	17.0	19.0
11	11.5	.5	.0	.0	.0	.0	12.0	9.0	14.0	19.5	16.5	18.0
12	11.0	.0	.0	.0	.0	.0	10.0	10.0	16.0	21.0	20.0	14.0
13	6.0	2.0	.0	.0	.0	.0	10.0	11.0	18.0	22.0	20.5	16.0
14	7.0	2.5	.0	.0	.0	.0	11.0	11.5	18.0	23.0	21.0	13.5
15	4.0	4.0	.0	.0	.0	.0	11.0	11.0	16.0	23.0	22.5	11.0
16	9.0	2.0	.0	.0	.0	.0	10.0	11.0	18.0	24.0	23.5	10.5
17	9.0	3.0	.0	.0	.0	.0	5.0	11.0	18.0	19.0	23.5	12.0
18	---	2.0	.0	.0	.0	.0	11.0	12.5	12.0	21.0	23.0	12.0
19	4.5	.5	.0	.0	.0	.0	4.0	16.0	16.0	21.0	22.0	13.0
20	7.0	.0	.0	.0	.0	.0	2.0	13.0	18.0	23.0	24.0	12.0
21	1.5	.0	.0	.0	.0	.0	5.0	11.5	19.0	23.0	26.0	12.0
22	1.0	.0	.0	.0	.0	.0	7.0	12.0	20.0	24.0	23.0	14.5
23	.0	.0	.0	.0	.0	.0	11.0	15.0	21.0	23.0	20.0	14.0
24	2.0	.0	.0	.0	.0	.0	11.0	14.0	20.5	24.0	19.0	14.0
25	2.0	.5	.0	.0	.0	.0	11.0	14.5	19.0	24.0	18.0	13.0
26	2.0	.0	.0	.0	.0	.0	9.0	15.0	19.0	22.0	18.5	13.0
27	5.0	.0	.0	.0	.0	.0	10.0	16.0	20.0	22.0	17.5	15.5
28	9.0	.0	.0	.0	.0	.0	17.0	17.5	21.0	22.0	19.0	15.0
29	7.0	.0	.0	.0	---	.0	11.0	12.5	20.5	22.0	21.0	12.0
30	7.0	.0	.0	.0	---	4.0	7.5	12.0	20.0	21.0	21.0	10.0
31	---	---	.0	.0	---	3.0	---	12.0	---	22.0	21.0	---
MEAN	7.0	1.5	.0	.0	.0	.0	7.5	13.5	17.0	21.5	21.5	15.0

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD

LOCATION.--Lat 44°22'11", long 102°33'56", in NE¼NE¼ sec.29, T.5 N., R.13 E., Meade County, Hydrologic Unit 10120202, on right bank 10 ft (3 m) downstream from highway bridge, 4.3 mi (6.9 km) northwest of Elm Springs and 4.7 mi (7.6 km) downstream from Hay Creek.

DRAINAGE AREA.--7,210 mi² (18,670 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 926: 1929, 1931(M), 1935, 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,171.60 ft (661.904 m) National Geodetic Vertical Datum of 1929. Prior to July 27, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm³), 304 mi (489 km) upstream since February 12, 1952. At a point 133 mi (214 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal near Belle Fourche (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km²) above station.

AVERAGE DISCHARGE.--51 years (water years 1929-31, 1935-82), 361 ft³/s (10.22 m³/s), 261,500 acre-ft/yr (322 hm³/yr); median of yearly mean discharges, 360 ft³/s (10.2 m³/s), 261,000 acre-ft/yr (320 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,100 ft³/s (1,280 m³/s) June 8, 1964, gage height, 15.90 ft (4.846 m), from rating curve extended above 23,000 ft³/s (651 m³/s); maximum gage height, 18.22 ft (5.553 m) May 21, 1982; no flow for many days in 1936-37, 1939-40, 1961-62, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1927 reached a stage of 21.8 ft (6.64 m). Flood in spring of 1933 reached a stage of about 20 ft (6.1 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,300 ft³/s (1,140 m³/s) at 0900 hours, May 21, gage height, 18.22 ft (5.553 m); minimum daily, 2.0 ft³/s (0.06 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	47	46	9.5	3.3	60	2320	75	1080	437	352	287
2	57	45	48	9.0	3.0	57	897	70	730	405	341	287
3	54	42	40	8.0	2.8	53	477	65	594	398	336	287
4	54	38	20	7.0	2.5	50	366	58	520	372	366	287
5	57	40	26	6.0	3.0	50	242	46	465	359	427	287
6	60	38	34	5.4	3.5	52	204	57	404	385	301	281
7	57	40	35	6.0	3.0	54	180	59	3580	372	369	287
8	52	42	34	6.0	3.0	57	160	62	2120	340	316	287
9	54	42	35	3.5	3.0	60	270	67	942	300	316	287
10	54	42	31	2.0	3.5	64	180	78	671	270	377	287
11	52	42	25	2.5	5.0	70	170	78	559	250	464	287
12	49	42	15	3.0	10	70	160	78	468	230	448	287
13	52	42	16	3.5	16	70	180	75	410	220	388	287
14	54	40	14	4.0	27	75	280	80	381	220	337	281
15	52	44	15	3.0	50	80	240	100	389	210	233	281
16	52	45	15	2.8	54	80	210	1300	2510	210	175	281
17	52	44	15	3.0	60	80	170	13500	1280	200	184	287
18	45	44	15	2.8	65	80	150	8160	895	210	272	287
19	40	42	14	2.6	70	75	130	3660	2070	220	281	287
20	44	45	15	2.5	75	70	120	15100	1370	230	281	287
21	49	44	15	2.4	90	70	110	35200	1030	250	281	287
22	50	44	15	2.3	85	70	105	18000	865	250	287	281
23	49	44	14	2.7	70	75	105	8400	737	250	287	281
24	50	44	13	3.0	60	80	105	4000	718	250	287	281
25	60	45	13	3.0	50	80	100	1910	631	350	287	281
26	50	45	13	3.0	55	90	95	1070	721	540	287	287
27	52	44	12	3.5	60	100	90	710	596	791	287	287
28	52	44	10	4.0	60	120	85	991	560	891	281	287
29	54	44	9.0	4.0	---	200	85	4180	560	628	281	287
30	52	43	9.0	3.5	---	500	80	2350	470	471	287	281
31	49	---	9.0	3.5	---	7320	---	1350	---	389	287	---
TOTAL	1612	1287	640.0	127.0	992.6	10012	8006	120929	28266	10898	9703	8556
MEAN	52.0	42.9	20.6	4.10	35.5	323	267	3901	942	352	313	285
MAX	60	47	48	9.5	90	7320	2320	35200	3580	891	464	287
MIN	40	38	9.0	2.0	2.5	50	80	46	381	200	175	281
AC-FT	3200	2550	1270	252	1970	19860	15880	239900	56070	21620	19250	16970

CAL YR 1981 TOTAL 53928.00 MEAN 148 MAX 2980 MIN .00 AC-FT 107000
WTR YR 1982 TOTAL 201028.60 MEAN 551 MAX 35200 MIN 2.0 AC-FT 398700

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1974 to September 1981.
WATER TEMPERATURES: October 1974 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,000 micromhos Jan. 31, Feb. 7-11; minimum daily, 800 micromhos June 19, 1976.
WATER TEMPERATURES: Maximum daily, 33.5°C June 25, 1977; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV 03...	1230	42	2000	8.3	9.5	15	--	K5	K7	1151	1001
JAN 06...	1145	5.4	3900	--	.0	1.0	15.2	K4	K31	2294	1864
MAR 10...	1300	65	2360	8.3	2.0	--	11.3	--	--	--	--
MAY 04...	1300	68	2620	8.4	17.0	13	10.6	K200	--	1060	910
JUL 07...	1300	364	1940	8.4	24.5	88	8.4	--	50	916	777
AUG 10...	1130	384	1900	8.2	16.0	--	--	K370	100	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 03...	230	140	220	29	2.9	11	1400	150	33	.5	1.0
JAN 06...	490	260	420	28	3.9	17	2800	430	64	.8	5.5
MAR 10...	--	--	--	--	--	--	--	--	--	--	--
MAY 04...	210	130	210	30	2.9	12	1300	150	32	.8	<1.9
JUL 07...	210	95	120	22	1.8	8.0	920	139	15	.4	6.7
AUG 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
NOV 03...	2590	2130	3.3	270	2.3	.170	.22	.82	.020	.020	.06
JAN 06...	4690	4320	6.4	68.4	6.3	.170	.22	1.40	.020	.020	.06
MAR 10...	--	--	--	--	4.2	.870	1.1	2.10	.010	.030	.09
MAY 04...	2230	--	3.0	409	1.2	.120	.15	1.70	<.010	<.010	--
JUL 07...	1640	1460	2.2	1610	.44	.230	.30	1.60	.020	.090	.28
AUG 10...	--	--	--	--	.49	.150	.19	1.30	.040	.060	.18

< Less than.
K Non-ideal colony count.

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
NOV 03...	1230	10	1	9	<1	<1	10	0	10	2	<3
JAN 06...	1145	12	1	11	<1	<1	10	0	10	<1	<1
MAY 04...	1300	12	5	9	<1	<1	<10	--	<10	<1	<1
JUL 07...	1300	20	10	10	<1	<1	<10	--	10	<5	<1

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)
NOV 03...	4	0	4	630	16	4	1	3	80	30
JAN 06...	7	5	4	180	50	2	--	<1	370	0
MAY 04...	9	5	4	810	40	7	6	1	150	100
JUL 07...	27	23	4	3700	8	2	0	2	260	250

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
NOV 03...	54	<.1	--	<.1	7	0	7	20	20	5
JAN 06...	370	2.7	2.2	.5	18	2	16	20	0	20
MAY 04...	50	.6	--	<.1	4	0	5	30	20	10
JUL 07...	7	.2	.1	.1	1	0	2	40	10	26

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 03...	1230	42	180	20	95	--	--	--	--
JAN 06...	1145	5.4	267	3.9	79	--	--	--	--
MAR 10...	1300	65	222	39	--	--	--	--	--
MAY 04...	1300	68	83	15	94	--	--	--	--
JUL 07...	1300	364	194	191	99	--	--	--	--
AUG 10...	1130	384	227	235	98	--	--	--	--

< Less than.

06439000 CHERRY CREEK NEAR PLAINVIEW, SD

LOCATION.--Lat 44°44'38", long 102°03'11", in SW¼NE¼ sec.16, T.9 N., R.17 E., Meade County, Hydrologic Unit 10120113, on left bank 5 ft (2 m) downstream from bridge on State Highway 73, 0.2 mi (0.3 km) downstream from small right-bank tributary, 6.2 mi (10.0 km) downstream from Red Owl Creek, and 11 mi (18 km) northeast of Plainview.

DRAINAGE AREA.--1,190 mi² (3,080 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October and November 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,158.06 ft (657.777 m) National Geodetic Vertical Datum of 1929. Prior to June 8, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 46.5 ft³/s (1.317 m³/s), 33,690 acre-ft/yr (41.5 hm³/yr); median of yearly mean discharges, 27 ft³/s (0.76 m³/s), 19,600 acre-ft/yr (24 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft³/s (496 m³/s) Apr. 1, 1952, gage height, 22.63 ft (6.898 m); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 3	1115	1680	47.6	10.92	3.328	June 10	0045	1070	30.3	9.61	2.929
May 22	1100	*9120	258	*19.30	5.883						

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	961	4.7	788	12	.30	.00
2	.00	.00	.00	.00	.00	.00	1380	4.2	262	11	.12	.00
3	.00	.00	.00	.00	.00	.00	1500	3.7	166	9.5	.00	.00
4	.00	.00	.00	.00	.00	.00	333	3.1	128	7.6	.00	.00
5	.00	.00	.00	.00	.00	.00	187	2.4	104	7.6	.00	.00
6	.00	.00	.00	.00	.00	.00	95	2.0	89	6.6	.00	.00
7	.00	.00	.00	.00	.00	.00	71	1.6	75	5.7	.00	.00
8	.00	.00	.00	.00	.00	.00	49	1.5	70	4.5	.00	.00
9	.00	.00	.00	.00	.00	.00	34	.95	714	3.7	.00	.00
10	.00	.00	.00	.00	.00	66	31	38	566	4.7	.00	.00
11	.00	.00	.00	.00	.00	169	31	566	137	3.9	.00	.00
12	.00	.00	.00	.00	.00	226	105	1680	98	2.9	.00	.00
13	.00	.00	.00	.00	.00	226	67	2000	74	7.0	.00	.00
14	.00	.00	.00	.00	.00	318	53	1900	62	8.3	.00	.00
15	.00	.00	.00	.00	.00	276	51	1700	50	5.7	.00	.00
16	.00	.00	.00	.00	.00	156	43	1600	38	3.4	.00	.00
17	.00	.00	.00	.00	.00	149	35	1740	32	2.2	.00	.00
18	.00	.00	.00	.00	.00	111	30	2100	27	1.8	.00	.00
19	.00	.00	.00	.00	.00	75	25	2340	24	1.8	.00	.00
20	.00	.00	.00	.00	.00	29	19	2040	20	1.5	.00	.00
21	.00	.00	.00	.00	.00	48	15	3730	18	1.1	.00	.00
22	.00	.00	.00	.00	.00	65	11	6300	24	.95	.00	.00
23	.00	.00	.00	.00	.00	49	8.3	4740	43	.60	.00	.00
24	.00	.00	.00	.00	.00	30	6.3	3070	43	.42	.00	.00
25	.00	.00	.00	.00	.00	21	6.3	662	38	.30	.00	.00
26	.00	.00	.00	.00	.00	11	6.3	324	31	.18	.00	.00
27	.00	.00	.00	.00	.00	6.3	6.3	226	25	.48	.00	.00
28	.00	.00	.00	.00	.00	12	6.0	182	18	9.1	.00	.00
29	.00	.00	.00	.00	---	46	6.0	170	15	5.3	.00	.00
30	.00	.00	.00	.00	---	207	5.3	218	14	2.0	.00	.00
31	.00	---	.00	.00	---	862	---	301	---	.54	.00	---
TOTAL	.00	.00	.00	.00	.00	3158.30	5176.8	37651.15	3793	132.37	.42	.00
MEAN	.000	.000	.000	.000	.000	102	173	1215	126	4.27	.014	.000
MAX	.00	.00	.00	.00	.00	862	1500	6300	788	12	.30	.00
MIN	.00	.00	.00	.00	.00	.00	5.3	.95	14	.18	.00	.00
AC-FT	.00	.00	.00	.00	.00	6260	10270	74680	7520	263	.8	.00

CAL YR 1981 TOTAL 3005.64 MEAN 8.23 MAX 464 MIN .00 AC-FT 5960
WTR YR 1982 TOTAL 49912.04 MEAN 137 MAX 6300 MIN .00 AC-FT 99000

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD

LOCATION.--Lat 44°36'10", long 101°29'24", in NE¼NW¼ sec.5, T.7 N., R.22 E., Ziebach County, Hydrologic Unit 10120112, on left bank 0.5 mi (0.8 km) east of village of Cherry Creek, 0.5 mi (0.8 km) downstream from Cherry Creek and 1.7 mi (2.7 km) upstream from Plum Creek.

DRAINAGE AREA.--23,900 mi² (61,900 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,699.29 ft (517.944 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1960, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Angostura Reservoir 197 mi (317 km) upstream (see station 06401000) since October 1949 and upstream reservoirs on Rapid Creek since 1956 and Belle Fourche River since 1952. Flow also affected by diversions for irrigation of about 70,000 acres (283 km²) and return flow from irrigated areas. Gage-height telemeter at station.

AVERAGE DISCHARGE.--22 years, 828 ft³/s (23.45 m³/s), 599,900 acre-ft/yr (740 hm³/yr); median of yearly mean discharges, 720 ft³/s (20.4 m³/s), 522,000 acre-ft/yr (640 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,900 ft³/s (1,580 m³/s) May 22, 1982, gage height, 15.77 ft (4.807 m); no flow Jan. 6 to Feb. 2, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55,900 ft³/s (1,580 m³/s) at 0700 hours, May 22, gage height, 15.77 ft (4.807 m); minimum daily, 25 ft³/s (0.71 m³/s) Jan. 10, 11.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 9 to Nov. 29, Apr. 4-10, May 24 to July 3;
stage-discharge relation affected by ice Nov. 30 to Mar. 12)

Oct. 1 to May 2

1.2	115	4.0	1820
1.5	192	5.0	3120
2.0	370	6.0	4800
2.5	615	7.0	7000
3.0	920		

May 3 to Sept. 30

1.1	129	6.0	5580
1.5	261	8.0	10400
2.0	503	10.0	17200
2.5	817	12.0	25400
3.0	1220	14.0	37600
4.0	2270	15.5	51800

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138	148	130	45	30	210	6140	190	3050	1620	680	789
2	126	146	140	45	30	190	4770	200	3040	1550	601	733
3	120	146	130	40	27	180	3480	182	2140	7500	572	590
4	122	141	120	40	27	160	2440	178	1690	2140	549	532
5	141	133	120	35	30	150	637	153	2070	1180	590	509
6	151	129	130	35	30	150	593	148	1710	1040	726	503
7	192	126	130	35	32	160	593	142	1430	915	774	503
8	238	124	120	30	35	200	566	142	4310	847	796	492
9	201	151	120	30	30	265	545	142	3150	753	803	492
10	175	151	110	25	35	400	500	364	2360	700	739	503
11	164	151	110	25	40	800	450	206	2090	625	662	498
12	159	148	100	30	50	1500	560	216	1430	572	713	498
13	154	148	95	30	60	3400	1100	202	1190	680	713	486
14	156	148	85	35	80	2800	650	3940	1110	520	662	503
15	184	148	80	35	90	2100	400	24300	1340	470	905	584
16	195	148	75	33	110	900	300	25600	2450	438	824	769
17	186	148	70	32	130	700	270	26600	4200	422	584	854
18	178	148	70	40	150	650	240	22200	2340	412	543	720
19	172	148	75	35	170	750	230	11800	1980	401	1220	637
20	170	161	80	30	200	700	220	16600	4280	377	931	584
21	170	156	80	30	240	1300	210	29600	3040	386	619	554
22	167	148	75	32	250	1700	200	48400	2200	396	572	509
23	161	146	75	35	240	700	250	33200	1950	443	554	486
24	161	146	70	40	200	800	230	18700	1750	791	625	475
25	164	148	65	50	190	770	200	9350	1600	1530	963	470
26	170	154	60	60	190	600	200	5610	1470	1250	726	448
27	164	154	60	55	210	500	190	4030	1510	923	687	432
28	164	146	55	50	220	530	190	4500	1350	1530	625	438
29	151	148	55	40	---	600	200	9000	1370	1290	706	1100
30	146	130	50	35	---	1000	190	8370	1560	1010	832	1050
31	148	---	50	32	---	1800	---	4100	---	762	687	---
TOTAL	5088	4367	2785	1144	3126	26665	26744	308365	65160	33493	22183	17741
MEAN	164	146	89.8	36.9	112	860	891	9947	2172	1080	716	591
MAX	238	161	140	60	250	3400	6140	48400	4310	7500	1220	1100
MIN	120	124	50	25	27	150	190	142	1110	377	543	432
AC-FT	10090	8660	5520	2270	6200	52890	53050	611600	129200	66430	44000	35190

CAL YR 1981 TOTAL 109068 MEAN 299 MAX 5800 MIN 25 AC-FT 216300
WTR YR 1982 TOTAL 516861 MEAN 1416 MAX 48400 MIN 25 AC-FT 1025000

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1975 to September 1976.
WATER TEMPERATURES: January 1975 to September 1976, October 1977 to September 1978.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976.

INSTRUMENTATION.--Water-quality monitor June 16, 1977, to September 1979.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,400 micromhos Jan. 27, 28, 1975; minimum daily, 620 micromhos Apr. 25, 1975.
WATER TEMPERATURES: Maximum daily, 35.0°C Aug. 26, 1975; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 66,000 mg/L May 25, 1976; minimum daily mean, 80 mg/L Nov. 15-17, 1972.
SEDIMENT LOADS: Maximum daily, 2,530,000 tons (2,300,000 tonnes) June 12, 1972; minimum daily, 15 tons (14 tonnes) Dec. 14, 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV 20...	1100	170	2200	8.5	.5	11	8.1	K6	K10	945	825
JAN 08...	1540	55	3430	7.4	.0	4.5	--	K28	K2	1550	1200
MAR 09...	1220	264	2040	7.4	1.0	--	--	<3	200	--	--
APR 02...	1530	4270	675	7.9	4.5	4100	10.4	130	K6	151	68
MAY 03...	1240	184	--	--	--	--	--	--	--	--	--
26...	1415	3310	1310	7.5	20.0	1200	7.6	>1000	K12	585	483
JUL 22...	1210	385	2280	7.8	28.0	74	6.6	K47	87	928	808
AUG 20...	1320	853	1156	7.8	26.5	--	5.8	94	130	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV 20...	220	96	230	34	3.4	14	1100	120	79	.4	<1.9
JAN 08...	390	140	330	31	3.8	17	1700	350	140	.7	8.2
MAR 09...	--	--	--	--	--	--	--	--	--	--	--
APR 02...	44	10	100	58	3.7	6.6	260	83	11	.1	4.4
MAY 03...	--	--	--	--	--	--	--	--	--	--	--
28...	150	51	140	34	2.6	12	730	142	23	.4	8.4
JUL 22...	210	98	210	33	3.1	14	1100	120	49	.5	7.8
AUG 20...	--	--	--	--	--	--	--	--	--	--	--

< Less than.
> More than.
K Non-ideal colony count.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
NOV											
20...	1950	--	2.7	895	.33	.090	.12	1.40	.010	.020	.06
JAN											
08...	3220	2940	4.4	304	2.4	.210	.27	1.30	.110	.110	.34
MAR											
09...	--	--	--	--	2.4	.630	.81	1.80	.100	.110	.34
APR											
02...	466	486	.63	5370	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
28...	1300	1200	1.8	11600	.59	.200	.26	1.10	.060	.890	2.7
JUL											
22...	2000	1760	2.7	2080	.11	.100	.13	1.40	.090	.080	.25
AUG											
20...	--	--	--	--	1.4	.170	.22	24.0	.060	15.0	46

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
NOV											
20...	1100	3	1	2	5	4	1	10	--	<10	<1
JAN											
08...	1540	5	1	4	1	0	1	10	0	10	1
MAY											
28...	1415	50	44	6	<1	--	4	40	30	10	11
JUL											
22...	1210	9	3	6	<1	--	<1	10	0	20	1

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
NOV											
20...	--	1	3	0	5	570	160	2	0	7	80
JAN											
08...	--	<1	8	5	3	800	10	1	--	<1	130
MAY											
28...	--	<1	50	38	12	39000	<9	8	3	1	960
JUL											
22...	--	<1	8	0	8	2500	60	<1	--	<1	130

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
NOV											
20...	10	70	.2	.0	.7	3	0	3	20	0	30
JAN											
08...	10	120	1.0	.4	.6	5	0	6	30	10	20
MAY											
28...	960	4	.7	.5	.2	9	3	6	170	--	<12
JUL											
22...	90	40	1.2	1.1	.1	3	2	1	30	20	10

< Less than.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)
NOV												
20...	1100	--	.0	--	.0	--	.0	--	.0	--	.0	--
MAR												
09...	1220	<.01	--	<.10	--	<.01	--	<.01	--	<.01	--	.00
MAY												
28...	1415	<.01	--	<.10	--	<.01	--	<.01	--	<.01	--	<.01

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)
NOV												
20...	--	.0	--	.0	--	--	.0	--	.0	--	.0	--
MAR												
09...	<.01	--	<.01	--	.00	<.01	--	<.01	--	<.01	--	.00
MAY												
28...	<.01	--	<.01	--	<.01	<.01	--	<.01	--	<.01	--	<.01

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
NOV											
20...	--	.0	--	--	--	--	.0	--	--	--	--
MAR											
09...	<.01	--	.00	.00	.00	<1	--	.00	.03	<.01	<.01
MAY											
28...	<.01	--	<.01	<.01	<.01	<1	--	<.01	.08	<.01	<.01

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV												
20...	1100	170	191	88	96	--	--	--	96	96	97	99
JAN												
08...	1540	35	147	14	66	--	--	--	76	91	100	--
MAR												
09...	1220	264	241	172	98	--	--	--	--	--	--	--
APR												
02...	1530	4270	9398	108000	99	--	--	--	--	--	--	--
MAY												
03...	1240	184	95	47	98	--	--	--	--	--	--	--
28...	1415	3310	1700	15200	--	--	--	--	97	100	--	--
JUL												
22...	1210	385	153	159	94	--	--	--	--	--	--	--
AUG												
20...	1320	853	2690	6200	--	--	--	--	--	--	--	--

< Less than.

06439980 LAKE OAHE NEAR PIERRE, SD

LOCATION.--Lat 44°27'30", long 100°23'29", in NE¼ sec.1, T.111 N., R.80 W., 5th principal meridian, Hughes County, Hydrologic Unit 10130105, in Pier A of Control Tower No. 1 of powerhouse intake structure of dam on Missouri River, 6.0 mi (9.7 km) northwest of Pierre, 7.1 mi (11.4 km) upstream from Bad River, and at mile 1,072.3 (1,725.3 km).

DRAINAGE AREA.--243,500 mi² (630,700 km²), approximately.

PERIOD OF RECORD.--August 1958 to current year (monthend contents only). Prior to October 1967, published as Oahe Reservoir near Pierre.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 14, 1959, nonrecording gages at various locations upstream from outlet works, Jan. 14, 1959, to Sept. 30, 1962, recorder in Tower No. 1 of outlet works, all at same datum.

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,338,000 acre-ft (28,800 hm³) below elevation 1,620.0 ft (493.78 m), top of spillway gates. Normal maximum, 22,240,000 acre-ft (27,400 hm³) below 1,617.0 ft (492.86 m), of which about 2,390,000 acre-ft (2,950 hm³) is designated for flood control. Inactive storage, 5,451,000 acre-ft (6,720 hm³) below elevation 1,540.0 ft (469.39 m). Dead storage, 1,970 acre-ft (2.43 hm³) below elevation 1,425.0 ft (434.34 m), invert of lowest outlet tunnel. Figures given herein represent elevations at powerhouse intake structure and total contents adjusted for wind effect.

The spillway consists of a gated chute with flat crest at elevation 1,596.5 ft (486.61 m), 8 gates, 50 by 23.5 ft (15.2 X 7.2 m) each; design capacity, 300,000 ft³/s (8,500 m³/s). The outlet works consist of 7 turbines with a generating capacity of 85,000 kilowatts each. Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 22,681,000 acre-ft (28,000 hm³) Aug. 22, 1975, affected by wind; minimum since initial filling, 14,815,000 acre-ft (18,300 hm³) Sept. 25, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 20,882,000 acre-ft (25,750 hm³) June 23; minimum contents, 14,280,000 acre-ft (17,610 hm³), Jan. 15.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents
Sept. 30	1592.63	14829000	
Oct. 31	1591.14	14514000	-315000
Nov. 30	1591.62	14514000	0
Dec. 31	1591.40	14576000	+62000
CAL YR 1981			-1737000
Jan. 31	1592.64	14884000	+308000
Feb. 28	1597.19	16049000	+1165000
Mar. 31	1602.32	17459000	+1410000
Apr. 30	1604.85	18244000	+785000
May 31	1610.19	19943000	+1699000
June 30	1612.53	20753000	+810000
July 31	1512.85	20771000	+18000
Aug. 31	1610.79	20080000	-691000
Sept. 30	1607.86	19166000	-914000
WTR YR 1982			+4337000

NOTE.--Reservoir frozen over Jan. 9 to Apr. 4.

06439980 LAKE OAHE NEAR PIERRE, SD--Continued

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       INITIAL DATE                                     81/10/09  81/10/09  81/10/09  81/10/09  81/10/09  81/10/09  81/10/09  81/10/09
       INITIAL TIME-DEPTH-BOTTOM                        1235 0000 1235 0008 1235 0016 1235 0032 1235 0065 1235 0098 1235 0131 1235 0163
00010   WATER      TEMP       CENT                      15.6      15.9      15.8      15.7      15.7      12.4      11.1      10.1
00011   WATER      TEMP       FAHN                      60.0      60.6      60.4      60.3      60.3      54.3      52.0      50.2
00020   AIR        TEMP       CENT                      15.5
00025 BAROMTRC   PRESSURE   MM OF HG                    723
00032   CLOUD      COVER      PERCENT                     5
00035   WIND     VELOCITY     MPH                       10.0
00036   WIND     DIR,FROM   NORTH=0                     315
00077   TRANSP     SECCHI     INCHES                    168
00094 CNDUCTVY   FIELD      MICROMHO                    803       803       804       804       803       825       825       825
00299    DO        PROBE      MG/L                      8.6       8.6       8.6       8.6       8.6       8.4       8.1       8.0
00301    DO        SATUR      PERCENT                   86.0      86.0      86.0      86.0      86.0      77.8      75.0      70.8
00400    PH                    SU                       8.30      8.30      8.30      8.30      8.30      8.00      8.00      8.00
       INITIAL DATE                                     81/10/09  81/10/09
       INITIAL TIME-DEPTH-BOTTOM                        1235 0125 1235 0015
       FINAL DATE                                                 81/10/09
       FINAL TIME-NUMBER OF SAMPLES                               1310 6
       CP-SPACE OR TIME-STATISTICAL FUNC                          CP-S
00010   WATER      TEMP       CENT                      9.6
00011   WATER      TEMP       FAHN                      49.3
00076   TURB     TRBIDMTR   HACH FTU                              4.0
00094 CNDUCTVY   FIELD      MICROMHO                    824
00299    DO        PROBE      MG/L                      7.9
00301    DO        SATUR      PERCENT                   69.9
00400    PH                    SU                       7.90
00410  T ALK     CACO3        MG/L                                168
00515 RESIDUE   DISS-105  C MG/L                                  560
00530 RESIDUE   TOT NFLT      MG/L                                  0
00610 NH3+NH4-   N TOTAL      MG/L                                0.010
00619 UN-IONZD   NH3-NH3      MG/L                                0.000
00620  NO3-N      TOTAL       MG/L                                0.040
00665 PHOS-TOT                MG/L P                              0.000
00900 TOT HARD   CACO3        MG/L                                267
00916 CALCIUM    CA-TOT       MG/L                                62.0
00927 MGNSIUM    MG,TOT       MG/L                                27.0
00940 CHLORIDE    TOTAL       MG/L                                 11
00945 SULFATE    SO4-TOT      MG/L                                284
32216 CHLRPHYL    TOTAL       UG/L                                8.00
70507  PHOS-T    ORTHO        MG/L P                              0.006
71900 MERCURY    HG,TOTAL     UG/L                                0.9
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Analyses by Corps of Engineers.
Tables from STORET.

06440000 MISSOURI RIVER AT PIERRE, SD
(National stream-quality accounting network station)

LOCATION.--Lat 44°22'25", long 100°22'20", in SE¼ sec.21, T.5 N., R.31 E., Hughes County, Hydrologic Unit 10140102, at discontinued gaging station, near right bank on downstream side of pier of Chicago and North Western Transportation Company bridge, 1.3 mi (2.1 km) upstream from Bad River, 5.8 mi (9.3 km) downstream from Oahe Dam, and at mile 1,006.5 (1,716 km).

DRAINAGE AREA.--243,500 mi^2 (630,700 km^2), approximately.

PERIOD OF RECORD.--Water years 1971 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1971 to September 1981.
WATER TEMPERATURES: July 1971 to September 1981.

COOPERATION.--Flow completely regulated by Lake Oahe (station 06439980) 5.8 mi (9.3 km) upstream. Discharge furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 895 micromhos Dec. 17, 1980; minimum daily, 530 micromhos Dec. 24, 1974, Dec. 17, 1980.
WATER TEMPERATURES: Maximum daily, 24.0°C July 31, Aug. 3, 1977, Aug. 21, 1980; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCARB-ONATE (MG/L CACO3) (00902)
NOV											
24...	1345	6000	700	8.2	6.0	1.6	10.1	K12	50	259	99
JAN											
18...	1400	12000	802	8.5	1.0	1.2	12.1	K1	K5	259	89
MAR											
22...	1030	40000	791	8.5	3.5	--	12.4	<1	K14	--	--
APR											
14...	1440	34300	795	8.6	5.5	1.6	11.9	<1	50	271	101
MAY											
18...	1430	35600	793	8.1	8.5	2.2	12.0	<1	>100	262	92
JUL											
26...	1430	41700	745	7.9	17.5	3.2	--	K5	>100	247	71
AUG											
27...	1415	48000	771	7.8	21.5	--	7.9	35	92	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV											
24...	61	26	76	39	2.2	4.6	250	160	11	.4	4.9
JAN											
18...	61	26	82	40	2.3	4.5	250	170	10	.5	4.7
MAR											
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
14...	64	27	84	40	2.3	5.5	270	170	17	.6	5.1
MAY											
18...	62	26	80	39	2.2	5.5	250	170	14	.6	4.9
JUL											
26...	61	23	73	40	2.1	4.7	230	176	10	.5	4.2
AUG											
27...	--	--	--	--	--	--	--	--	--	--	--

< Less than.
> More than.
K Non-ideal colony count.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
NOV 24...	545	532	.74	11800	.15	.190	.24	1.40	.030	.010	.03
JAN 18...	530	541	.72	17200	.15	.250	.32	.64	.030	.010	.03
MAR 22...	--	--	--	--	<.10	.090	.12	.53	.030	.020	.06
APR 14...	560	575	.76	59400	--	--	--	--	--	--	--
MAY 18...	549	544	.75	52700	<.10	.170	.22	2.00	.080	.080	.25
JUL 26...	530	512	.72	59700	<.10	.120	.15	.70	<.010	.050	.15
AUG 27...	--	--	--	--	.16	.180	.23	.30	<.010	.070	.21

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
NOV 24...	1345	2	0	2	1	--	<1	<10	--	<10	<1
JAN 18...	1400	2	1	1	<1	--	<1	10	--	<10	<1
MAR 22...	1430	--	--	--	--	--	--	--	--	--	--
MAY 18...	1430	2	0	2	11	3	8	<10	--	<10	1
JUL 26...	1430	2	0	2	<1	--	<1	10	--	<10	1

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
NOV 24...	--	<3	6	3	3	40	<10	1	0	2	30
JAN 18...	--	<3	3	0	3	40	<10	2	0	3	10
MAR 22...	--	--	--	--	--	70	--	--	--	--	--
MAY 18...	--	<1	24	7	17	240	<9	10	6	8	30
JUL 26...	--	<1	5	0	9	170	<5	<1	--	<1	30

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
NOV 24...	10	17	<.1	--	<.1	1	0	1	20	1	19
JAN 18...	8	2	.2	.1	.1	1	0	1	10	3	7
MAR 22...	--	--	--	--	--	--	--	--	--	--	--
MAY 18...	10	20	.5	.3	.2	1	0	1	130	60	75
JUL 26...	20	7	.4	--	<.1	1	0	1	30	20	12

< Less than.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV												
24...	1345	8000	34	734	97	--	--	--	--	--	--	--
JAN												
18...	1400	12000	32	1040	91	--	--	--	--	--	--	--
MAR												
22...	1430	40000	2	216	100	--	--	--	--	--	--	--
APR												
14...	1440	39300	3	318	95	--	--	--	--	--	--	--
MAY												
18...	1430	35600	23	2210	13	--	--	--	--	--	--	--
JUL												
26...	1430	41700	16	1800	74	--	--	--	--	--	--	--
AUG												
27...	1415	38000	11	1130	81	--	--	--	--	--	--	--

06441000 BAD RIVER NEAR MIDLAND, SD

LOCATION.--Lat 44°04'01", long 101°09'36", in NE¼NW¼ sec.7, T.1 N., R.25 E., Haakon County, Hydrologic Unit 10140102, on right bank at downstream side of bridge on State Highway 63, 0.4 mi (0.6 km) southwest of Midland, 2.0 mi (3.2 km) upstream from Mitchell Creek, and 3.7 mi (6.0 km) upstream from Ash Creek.

DRAINAGE AREA.--1,460 mi^2 (3,780 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Prior to February 1946 monthly discharge only, published in WSP 1309.

REVISED RECORDS.--WSP 2117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,849.14 ft (563.618 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 21, 1961, nonrecording gage, and Feb. 21, 1961, to June 14, 1967, water-stage recorder at site 4.2 mi (6.8 km) downstream at datum 15.72 ft (4.791 m) lower. June 15 to July 26, 1967, nonrecording gage at site 30 ft (9 m) upstream and July 27, 1967, to June 14, 1971, water-stage recorder at site 60 ft (18 m) upstream, both at present datum.

REMARKS.--Records poor. Only daily discharges above 100 ft^3/s (2.83 m^3/s) are being published. One observation of water temperature and specific conductance was made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft^3/s (833 m^3/s) June 15, 1967, gage height, 24.44 ft (7.449 m), from floodmarks, 20.10 ft (6.126 m), from floodmarks, at former site and datum, from rating curve extended above 16,000 ft^3/s (453 m^3/s); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (14.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 17	0600	1850	52.4	12.85	3.917
May 21	0700	*6120	173	*20.31	6.190
May 24	1300	4450	126	18.00	5.486
June 7	0300	1620	45.9	12.03	3.667
June 16	2200	775	21.9	9.40	2.865

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

Daily discharge, in cubic feet per second, above 100 ft^3/s are given herewith:

May 15	609
May 16	1550
May 17	1780
May 18	792
May 19	258
May 20	1730
May 21	5590
May 22	4580
May 23	2690
May 24	3240
May 25	2220
May 26	1500
May 27	637
May 28	322
May 29	223
May 30	228
May 31	169
June 1	125
June 6	453
June 7	1030
June 8	267
June 9	223
June 10	118
June 16	293
June 17	259
July 28	106
July 29	151

06441500 BAD RIVER NEAR FORT PIERRE, SD

LOCATION.--Lat 44°19'36", long 100°23'02", in NW¼NW¼ sec.10, T.4 N., R.31 E., Stanley County, Hydrologic Unit 10140102, on right bank at downstream side of highway bridge, 2.1 mi (3.4 km) south of Fort Pierre, 4.3 mi (6.9 km) downstream from Willow Creek, and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--3,107 mi² (8,047 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year. Monthly discharge only for July 1932 to February 1934, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 856: 1929(M), 1937.

GAGE.--Water-stage recorder. Datum of gage is 1,427.83 ft (435.203 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1951, nonrecording gage at same site and datum.

REMARKS.--Records fair. U.S. Weather Bureau gage-height telemeter at station.

AVERAGE DISCHARGE.--54 years, 147 ft³/s (4.163 m³/s), 106,500 acre-ft/yr (131 hm³/yr); median of yearly mean discharges, 98 ft³/s (2.78 m³/s), 71,000 acre-ft/yr (88 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,800 ft³/s (1,240 m³/s) June 18, 1967, gage height, 29.55 ft (9.007 m); no flow for long periods in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1927 reached a stage of 30.89 ft (9.415 m), from floodmarks, discharge, about 55,000 ft³/s (1,560 m³/s). Flood in July 1905 reached a stage about 2 ft (0.610 m) higher than that in April 1927.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 14	1000	*15600	442	*24.05	7.330
May 18	1000	2580	73.1	10.19	3.106
May 20	2200	6670	189	16.34	4.980

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 6	1500	6250	177	15.81	4.819
June 9	0100	2300	65.1	9.71	2.960

No flow Oct. 1 to Feb. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	49	147	.57	509	32	90	6.6
2	.00	.00	.00	.00	.00	9.8	88	.49	384	26	65	13
3	.00	.00	.00	.00	.00	15	73	.42	297	25	42	7.9
4	.00	.00	.00	.00	.00	11	89	.36	240	26	25	2.7
5	.00	.00	.00	.00	.00	18	102	.31	206	22	28	.66
6	.00	.00	.00	.00	.00	13	53	.36	4400	18	20	.27
7	.00	.00	.00	.00	.00	12	33	.36	1750	16	12	.17
8	.00	.00	.00	.00	.00	13	18	.36	1580	13	10	.10
9	.00	.00	.00	.00	.00	8.3	43	.36	1280	13	8.0	.10
10	.00	.00	.00	.00	.00	35	90	.42	511	19	6.0	.31
11	.00	.00	.00	.00	.00	64	99	.42	436	35	4.0	.31
12	.00	.00	.00	.00	.00	62	73	.57	252	21	2.0	.57
13	.00	.00	.00	.00	.00	23	48	288	182	11	1.3	1.8
14	.00	.00	.00	.00	.00	15	22	11600	182	13	.76	2.0
15	.00	.00	.00	.00	.00	13	9.2	4120	230	9.2	.31	2.0
16	.00	.00	.00	.00	.00	6.2	24	1740	200	6.2	.20	2.0
17	.00	.00	.00	.00	28	4.9	51	1850	155	4.6	.20	1.1
18	.00	.00	.00	.00	446	4.4	30	2490	659	3.0	4.0	.36
19	.00	.00	.00	.00	771	7.5	19	2010	367	2.7	10	.17
20	.00	.00	.00	.00	741	9.8	10	3480	248	159	12	.10
21	.00	.00	.00	.00	536	10	5.8	6130	155	195	4.0	.08
22	.00	.00	.00	.00	328	7.0	3.8	6130	123	81	6.5	.06
23	.00	.00	.00	.00	97	7.5	2.2	6420	94	33	23	.03
24	.00	.00	.00	.00	90	26	1.3	5420	78	12	35	.02
25	.00	.00	.00	.00	64	30	.66	4050	63	57	399	.03
26	.00	.00	.00	.00	76	50	.57	4000	57	718	182	.03
27	.00	.00	.00	.00	109	188	.57	2660	52	321	79	.03
28	.00	.00	.00	.00	52	446	.57	1580	47	80	37	.03
29	.00	.00	.00	.00	---	597	.57	1120	42	25	20	.03
30	.00	.00	.00	.00	---	594	.66	921	37	80	9.8	.04
31	.00	---	.00	.00	---	525	---	694	---	180	6.2	---
TOTAL	.00	.00	.00	.00	3338.00	2874.4	1137.90	66708.00	14816	2256.7	1142.27	42.60
MEAN	.000	.000	.000	.000	119	92.7	37.9	2152	494	72.8	36.8	1.42
MAX	.00	.00	.00	.00	771	597	147	11600	4400	718	399	13
MIN	.00	.00	.00	.00	.00	4.4	.57	.31	37	2.7	.20	.02
AC-FT	.00	.00	.00	.00	6620	5700	2260	132300	29390	4480	2270	84

CAL YR 1981 TOTAL 2690.99 MEAN 7.37 MAX 540 MIN .00 AC-FT 5340
WTR YR 1982 TOTAL 92315.87 MEAN 253 MAX 11600 MIN .00 AC-FT 183100

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1972 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: October 1971 to current year.
WATER TEMPERATURES: October 1972 to current year.

REVISED RECORDS.--WRD SD-81-1: 1979-80.

REMARKS.--Records fair. No flow Oct. 1 to Feb. 16. Sediment-discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 124,000 mg/L July 17, 1981; minimum daily mean, 0 mg/L on many days each year.
SEDIMENT LOADS: Maximum daily, 949,000 tons (860,900 tonnes) May 14, 1982; minimum daily, 0 ton (0 tonne) on many days each year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 38,800 mg/L June 6; minimum daily mean, 0 mg/L on many days.
SEDIMENT LOADS: Maximum daily, 949,000 tons (860,900 tonnes) May 14; minimum daily, 0 ton (0 tonne) on many days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	0.00	---	0.00	0.00	---	0.00	0.00	---	0.00

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00	0	.00	.00	0	.0	49	6600	873
2	.00	0	.00	.00	0	.0	9.8	4500	119
3	.00	0	.00	.00	0	.0	15	4900	198
4	.00	0	.00	.00	0	.0	11	4800	143
5	.00	0	.00	.00	0	.0	18	4800	233
6	.00	0	.00	.00	0	.0	13	4700	165
7	.00	0	.00	.00	0	.0	12	4600	149
8	.00	0	.00	.00	0	.0	13	4500	158
9	.00	0	.00	.00	0	.0	8.3	4500	101
10	.00	0	.00	.00	0	.0	35	5100	482
11	.00	0	.00	.00	0	.0	64	6700	1160
12	.00	0	.00	.00	0	.0	62	6850	1150
13	.00	0	.00	.00	0	.0	23	5200	323
14	.00	0	.00	.00	0	.0	15	4350	176
15	.00	0	.00	.00	0	.0	13	3250	114
16	.00	0	.00	.00	0	.0	6.2	2500	42
17	.00	0	.00	28	660	50	4.9	2350	31
18	.00	0	.00	446	6080	7320	4.4	2200	26
19	.00	0	.00	771	11000	22900	7.5	2500	51
20	.00	0	.00	741	17800	35600	9.8	2450	65
21	.00	0	.00	536	20400	29500	10	1750	47
22	.00	0	.00	328	14000	12400	7.0	1250	24
23	.00	0	.00	97	7900	2070	7.5	1000	20
24	.00	0	.00	90	2700	656	26	1750	123
25	.00	0	.00	64	1700	294	30	1800	146
26	.00	0	.00	76	2200	451	50	2500	337
27	.00	0	.00	109	6150	1810	188	11900	6040
28	.00	0	.00	52	7100	997	446	26900	32400
29	.00	0	.00	---	---	---	597	32400	52200
30	.00	0	.00	---	---	---	594	32800	52600
31	.00	0	.00	---	---	---	525	29300	41500
TOTAL	0.00	---	0.00	3338.00	---	114048.0	2874.4	---	191196
		APRIL			MAY			JUNE	
1	147	14800	5870	.57	280	0	509	3100	4260
2	88	10400	2470	.49	260	0	388	2600	2700
3	73	7750	1530	.42	240	0	297	2000	1600
4	89	6750	1620	.36	220	0	240	1300	842
5	102	4800	1320	.31	200	0	206	900	501
6	53	1650	236	.36	200	0	4400	38800	461000
7	33	1320	118	.36	200	0	1750	23400	111000
8	18	1150	56	.36	200	0	1580	16200	69100
9	43	1500	174	.36	220	0	1280	18900	65300
10	90	2440	593	.42	240	0	511	8700	12000
11	99	2500	668	.42	240	0	436	5900	6950
12	73	2200	434	.57	250	0	252	3350	2280
13	48	1800	233	286	2440	1900	182	2800	1380
14	22	1410	84	11600	30300	949000	182	2500	1230
15	9.2	1100	27	4120	20500	228000	230	2600	1610
16	24	1230	80	1740	12500	58700	200	2400	1300
17	51	1650	227	1850	16900	84400	155	1650	691
18	30	1380	112	2490	23800	160000	659	5000	8900
19	19	1280	66	2010	20600	112000	367	4000	3960
20	10	980	26	3480	23600	222000	248	2500	1670
21	5.8	800	13	6130	20800	344000	155	2000	837
22	3.8	710	7.3	6130	7200	119000	123	1000	332
23	2.2	620	3.7	6420	12100	210000	94	500	127
24	1.3	520	1.8	5420	9600	140000	78	310	65
25	.66	380	.68	4050	6000	65600	63	300	51
26	.57	240	.38	4000	9800	106000	57	290	45
27	.57	260	.40	2660	6000	43100	52	280	39
28	.57	250	.38	1580	4350	18600	47	270	34
29	.57	250	.38	1120	4600	13900	42	260	29
30	.66	300	.53	921	4000	9950	37	250	25
31	---	---	---	694	3550	6650	---	---	---
TOTAL	1137.90	---	15972.55	66708.00	---	2892800	14816	---	759858

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	32	240	21	90	1000	243	6.6	450	8.0
2	26	230	16	65	800	140	13	550	19
3	25	220	15	42	600	68	7.9	500	11
4	26	210	15	25	495	33	2.7	370	2.7
5	22	200	12	28	385	29	.66	310	.55
6	18	190	9.2	20	245	13	.27	255	.19
7	16	180	7.8	12	110	3.6	.17	200	.09
8	13	170	6.0	10	100	2.7	.10	140	.04
9	13	162	5.7	8.0	90	1.9	.10	100	.03
10	19	180	9.2	6.0	80	1.3	.31	38	.03
11	35	200	19	4.0	70	.76	.31	40	.03
12	21	190	11	2.0	60	.32	.57	50	.08
13	11	150	4.5	1.3	47	.16	1.8	60	.29
14	13	130	4.6	.76	45	.09	2.0	60	.32
15	9.2	120	3.0	.31	40	.03	2.0	45	.24
16	6.2	118	2.0	.20	40	.02	2.0	30	.16
17	4.6	110	1.4	.20	35	.02	1.1	20	.06
18	3.0	100	.81	4.0	170	1.8	.36	20	.02
19	2.7	100	.73	10	350	9.5	.17	20	.00
20	159	13600	5840	12	400	13	.10	20	.00
21	195	17000	8950	4.0	300	3.2	.08	25	.00
22	81	8900	1950	6.5	200	3.5	.06	35	.00
23	33	4500	401	23	80	5.0	.03	38	.00
24	12	1200	39	35	1250	118	.02	25	.00
25	57	7990	1230	399	12300	13300	.03	20	.00
26	718	28900	56000	182	9250	4550	.03	15	.00
27	321	21600	18700	79	6600	1410	.03	10	.00
28	80	10300	2220	37	4300	430	.03	10	.00
29	25	3400	229	20	2250	121	.03	10	.00
30	80	1050	227	9.8	900	24	.04	10	.00
31	180	1480	719	6.2	450	7.5	---	---	---
TOTAL	2256.7	---	96668.94	1182.27	---	20533.40	42.60	---	42.83

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1981 TO SEPTMEBER 1982
RANDOM INSTANTANEOUS

FEB 18	0.0	MAR 13	10.0	MAY 14	10.0	MAY 19	17.0	JUN 6	15.0	JUN 24	22.0
19	4.0	16	6.5	14	11.0	21	12.0	7	18.0	JUL 26	20.0
21	3.0	23	5.0	15	12.0	22	15.5	9	17.0	27	24.0
24	3.0	31	4.0	16	15.0	24	17.0	11	20.0	AUG 25	21.0
27	1.0	APR 17	13.0	17	12.0	27	19.0	19	18.0		

06442000 MEDICINE KNOLL CREEK NEAR BLUNT, SD

LOCATION.--Lat 44°33'46", long 99°54'50", in NW¼ sec.31, T.113 N., R.75 W., Sully County, Hydrologic Unit 10140103, on left bank at downstream side of highway bridge, 4.8 mi (7.7 km) northeast of Blunt and 5.5 mi (8.8 km) upstream from South Fork Medicine Knoll Creek.

DRAINAGE AREA.--317 m^2 (821 km^2).

PERIOD OF RECORD.--March 1950 to current year. Prior to October 1959, published as Medicine Creek near Blunt.

REVISED RECORDS.--WRD SD-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,611.08 ft (491.057 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 31, 1950, nonrecording gage at same site and datum.

REMARKS.--Records fair. Only daily discharges above 25 ft^3/s (0.708 m^3/s) are being published.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,830 ft^3/s (51.8 m^3/s) Apr. 5, 1952, gage height, 12.34 ft (3.761 m), from floodmarks; maximum gage height, 13.2 ft (4.02 m) between Mar. 26-29, 1950, from floodmarks (backwater from ice); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20 ft^3/s(0.57 m^3/s) at 1330 hours, Mar. 1; maximum gage height, 10.92 ft (3.328 m), backwater from ice; no peak above base of 50 ft^3/s (1.42 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

No daily discharges in cubic feet per second, above 25 ft^3/s (0.708 m^3/s) this year.

06442500 MEDICINE CREEK AT KENNEBEC, SD

LOCATION.--Lat 43°54'17", long 99°52'35", in NW¼NE¼ sec.18, T.105 N., R.75 W., Lyman County, Hydrologic Unit 10140104, on right bank 4 ft (1 m) downstream from highway bridge, 0.5 mi (0.8 km) west of Kennebec and 0.5 mi (0.8 km) downstream from small right-bank tributary.

DRAINAGE AREA.--465 mi² (1,200 km²), approximately.

PERIOD OF RECORD.--July 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,659.64 ft (505.858 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--28 years, 15.6 ft³/s (0.442 m³/s), 11,300 acre-ft/yr (13.9 hm³/yr); median of yearly mean discharges, 6.4 ft³/s (0.18 m³/s), 4,600 acre-ft/yr (5.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,970 ft³/s (254 m³/s) Mar. 28, 1960, gage height, 16.71 ft (5.093 m); no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1952 reached a stage of 17.0 ft (5.18 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 13	--	200	5.66	ice jam		May 22	0015	3080	87.2	13.71	4.179
Apr. 1	0300	246	6.97	3.82	1.164	May 30	1645	283	8.02	5.70	1.737
May 14	2330	*4180	118	*14.80	4.511	Aug. 24	2315	576	16.3	7.58	2.310

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	3.7	236	.00	85	20	.00	12
2	.00	.00	.00	.00	.00	3.5	171	.00	62	12	.00	7.6
3	.00	.00	.00	.00	.00	3.3	92	.00	45	7.6	.00	5.3
4	.00	.00	.00	.00	.00	3.0	55	.00	32	6.9	.00	4.2
5	.00	.00	.00	.00	.00	2.8	36	.00	24	5.6	.00	2.9
6	.00	.00	.00	.00	.00	2.7	23	.00	24	4.9	.00	1.9
7	.00	.00	.00	.00	.00	3.0	24	.00	63	4.0	.00	1.4
8	.00	.00	.00	.00	.00	4.0	19	.00	63	2.8	.00	.92
9	.00	.00	.00	.00	.00	5.0	11	.00	36	2.2	.00	.57
10	.00	.00	.00	.00	.00	10	8.8	.00	29	1.6	.00	.32
11	.00	.00	.00	.00	.00	21	7.1	.09	21	2.3	.00	.05
12	.00	.00	.00	.00	.00	100	7.8	9.0	16	1.9	.00	.64
13	.00	.00	.00	.00	.00	200	12	10	13	1.2	.00	1.1
14	.00	.00	.00	.00	.00	190	21	1470	13	2.0	.00	.50
15	.00	.00	.00	.00	.00	150	13	2540	16	3.1	.00	.68
16	.00	.00	.00	.00	.05	120	8.2	1500	13	1.4	.00	.38
17	.00	.00	.00	.00	.20	100	5.5	1300	12	.32	.00	.32
18	.00	.00	.00	.00	1.0	80	2.9	1000	15	.01	.00	.09
19	.00	.00	.00	.00	9.0	60	2.5	900	21	.00	.00	.05
20	.00	.00	.00	.00	10	50	1.8	1000	28	.00	.00	.09
21	.00	.00	.00	.00	9.5	40	1.4	2800	34	.00	.00	.00
22	.00	.00	.00	.00	8.5	35	1.4	2630	21	.00	1.4	.00
23	.00	.00	.00	.00	7.5	33	.78	1170	16	.00	2.1	.00
24	.00	.00	.00	.00	6.5	32	.80	431	13	.26	189	.00
25	.00	.00	.00	.00	6.0	35	.48	207	9.8	.00	437	.00
26	.00	.00	.00	.00	5.0	40	.24	111	8.2	.00	102	.00
27	.00	.00	.00	.00	4.5	50	.14	71	6.7	.00	34	.00
28	.00	.00	.00	.00	4.0	76	.04	52	5.6	.20	18	.00
29	.00	.00	.00	.00	---	161	.02	40	4.6	.32	10	.00
30	.00	.00	.00	.00	---	191	.00	150	4.2	.01	17	.00
31	.00	---	.00	.00	---	224	---	95	---	.00	17	---
TOTAL	.00	.00	.00	.00	71.75	2029.0	762.90	17486.09	754.1	80.62	827.50	40.97
MEAN	.000	.000	.000	.000	2.56	65.5	25.4	564	25.1	2.60	26.7	1.37
MAX	.00	.00	.00	.00	10	224	236	2800	85	20	437	12
MIN	.00	.00	.00	.00	.00	2.7	.00	.00	4.2	.00	.00	.00
AC-FT	.00	.00	.00	.00	142	4020	1510	34680	1500	160	1640	81

CAL YR 1981 TOTAL 0.28 MEAN .001 MAX .20 MIN .00 AC-FT 0
WTR YR 1982 TOTAL 22052.93 MEAN 60.4 MAX 2800 MIN .00 AC-FT 43740

06442700 LAKE SHARPE NEAR FORT THOMPSON, SD

LOCATION.--Lat 44°02'18", long 99°26'45", in SE¼ sec.27, T.107 N., R.72 W., Lyman County, Hydrologic Unit 10140101, at left approach wall of powerhouse at Big Bend Dam on Missouri River, 2.5 mi (4.0 km) south of Fort Thompson, and at mile 987.4 (1,588.7 km).

DRAINAGE AREA.--249,300 mi^2 (645,700 km^2), approximately.

PERIOD OF RECORD.--July 1963 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam; closure made July 1963; intentional storage began November 1963. Maximum capacity, 1,884,000 acre-ft (2,320 hm^3) below elevation, 1,423.0 ft (433.73 m), top of spillway gates. Normal maximum, 1,699,000 acre-ft (2,090 hm^3) below elevation 1,420.0 ft (432.82 m). Inactive storage, 1,424,000 acre-ft (1,760 hm^3) below elevation 1,415.0 ft (431.29 m). Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of a concrete chute with flat crest at elevation 1,385.0 ft (422.15 m) surmounted by 8 taintor gates, each 40 by 38 ft (12.2 X 11.6 m); design capacity, 390,000 ft^3/s (11,000 m^3/s). Normal releases are through 8 power units (completed in July 1966), with a generating capacity of 58,500 kilowatts each. Maximum release through powerplant about 100,000 ft^3/s (2,830 m^3/s). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,829,000 acre-ft (2,260 hm^3) Apr. 22, 1971, affected by wind; minimum since initial filling, 1,448,000 acre-ft (1,790 hm^3) Sept. 17, 1967, affected by wind.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,781,000 acre-ft (2,200 hm^3) Apr. 12; minimum contents, 1,663,000 acre-ft (2,050 hm^3) Oct. 22.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents
Sept. 30	1420.57	1723000	
Oct. 31	1420.61	1733000	+10000
Nov. 30	1421.14	1747000	+14000
Dec. 31	1420.90	1750000	+3000
CAL YR 1981			-21000
Jan. 31	1420.70	1737000	-13000
Feb. 28	1421.10	1762000	+25000
Mar. 31	1420.24	1716000	-46000
Apr. 30	1420.24	1710000	-6000
May 31	1420.62	1736000	+26000
June 30	1419.85	1698000	-38000
July 31	1420.20	1711000	+13000
Aug. 31	1420.36	1724000	+13000
Sept. 30	1419.95	1703000	-21000
WTR YR 1982			-20000

NOTE.--Reservoir frozen over Dec. 30 to Apr. 6.

06442700 LAKE SHARPE NEAR FORT THOMPSON, SD--Continued

	INITIAL DATE			81/10/06	81/10/06	81/10/06	81/10/06	81/10/06	81/10/06	81/10/06
	INITIAL TIME-DEPTH-BOTTOM			1640 0000	1640 0006	1640 0016	1640 0032	1640 0065	1640 0075	1640 0005
	FINAL DATE									81/10/06
	FINAL TIME-NUMBER OF SAMPLES									1700 G
	CP-SPACE OR TIME-STATISTICAL FUNC									CP-S
00010	WATER	TEMP	CENT	16.5	16.4	16.0	15.9	15.8	15.8	
00011	WATER	TEMP	FAHN	61.7	61.5	60.8	60.6	60.4	60.4	
00020	AIR	TEMP	CENT	16.1						
00025	BAROMTRC	PRESSURE	MM OF HG	741						
00032	CLOUD	COVER	PERCENT	10						
00035	WIND	VELOCITY	MPH	10.0						
00036	WIND	DIR.FROM	NORTH-0	45						
00076	TURB	TRBIDMTR	HACH FTU							5.0
00077	TRANSP	SECCHI	INCHES	96						
00094	CNDUCTVY	FIELD	MICROMHO	808	807	807	807	807	807	
00299	DO	PROBE	MG/L	8.2	8.1	8.1	8.1	8.2	8.1	
00301	DO	SATUR	PERCENT	84.5	81.0	81.0	81.0	82.0	81.0	
00400	PH		SU	8.30	8.30	8.30	8.30	8.30	8.30	
00410	T ALK	CACO3	MG/L							166
00515	RESIDUE	DISS-105	C MG/L							530
00530	RESIDUE	TOT NFLT	MG/L							0
00610	NH3+NH4-	N TOTAL	MG/L							0.010
00619	UN-IONZD	NH3-NH3	MG/L							0.000
00620	NO3-N	TOTAL	MG/L							0.000
00665	PHOS-TOT		MG/L P							0.010
00900	TOT HARD	CACO3	MG/L							262
00916	CALCIUM	CA-TOT	MG/L							60.0
00927	MGNSIUM	MG,TOT	MG/L							27.0
00940	CHLORIDE	TOTAL	MG/L							11
00945	SULFATE	SO4-TOT	MG/L							244
32216	CHLRPHYL	TOTAL	UG/L							38.00
70507	PHOS-T	ORTHO	MG/L P							0.000
71900	MERCURY	HG,TOTAL	UG/L							0.9

Analyses by Corps of Engineers.
Tables from STORET.

06442950 CROW CREEK NEAR GANN VALLEY, SD

LOCATION.--Lat 43°59'29", long 99°13'07", in NE¼NW¼ sec.15, T.106 N., R.70 W., Buffalo County, Hydrologic Unit 10140105, near center of span at downstream side of highway bridge, 6.4 mi (10.3 km) upstream from Smith Creek, 6.9 mi (11.1 km) downstream from Elm Creek, and 12.0 mi (19.3 km) southwest of Gann Valley.

DRAINAGE AREA.--670 mi^2 (1,740 km^2), approximately.

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,434.73 ft (437.306 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--11 years, 17.9 ft^3/s (0.507 m^3/s), 12,970 acre-ft/yr (16.0 hm^3/yr); median of yearly mean discharges, 9.4 ft^3/s (0.27 m^3/s), 6,800 acre-ft/yr (8.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft^3/s (110 m^3/s) Mar. 22, 1978, gage height, 14.60 ft (4.450 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.25 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 21	1800	185	5.24	4.83	1.472
Mar. 31	1200	322	9.12	5.86	1.786
May 16	2200	319	9.03	5.84	1.780
May 21	1100	*666	18.9	*7.78	2.371
May 30	1900	338	9.57	5.96	1.817
June 15	0600	160	4.53	4.62	1.408

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	40	253	.08	190	.10	.00	.00
2	.00	.00	.00	.00	.00	35	130	.06	76	.05	.00	.00
3	.00	.00	.00	.00	.00	35	72	.04	42	.02	.00	.00
4	.00	.00	.00	.00	.00	35	46	.02	33	.01	.00	.00
5	.00	.00	.00	.00	.00	30	34	.01	30	.00	.00	.00
6	.00	.00	.00	.00	.00	30	23	.01	26	.00	.00	.00
7	.00	.00	.00	.00	.00	30	20	.00	23	.00	.00	.00
8	.00	.00	.00	.00	.00	35	17	.00	20	.00	.00	.00
9	.00	.00	.00	.00	.00	35	14	.00	17	.00	.00	.00
10	.00	.00	.00	.00	.00	40	20	.00	13	.00	.00	.00
11	.00	.00	.00	.00	.00	42	21	.00	8.5	.00	.00	.00
12	.00	.00	.00	.00	.00	55	17	.00	6.0	.00	.00	7.6
13	.00	.00	.00	.00	.00	44	11	.00	3.5	.00	.00	6.6
14	.00	.00	.00	.00	.00	53	11	39	12	.00	.00	3.2
15	.00	.00	.00	.00	.00	59	17	112	105	.00	.00	.60
16	.00	.00	.00	.00	.00	115	14	169	43	.00	.00	.10
17	.00	.00	.00	.00	.00	104	11	169	53	.00	.00	.01
18	.00	.00	.00	.00	.00	73	8.0	73	31	.00	.00	.00
19	.00	.00	.00	.00	.00	101	5.0	48	19	.00	.00	.00
20	.00	.00	.00	.00	.00	83	7.0	76	14	.00	.00	.00
21	.00	.00	.00	.00	70	52	9.0	465	10	.00	.00	.00
22	.00	.00	.00	.00	126	40	9.3	92	6.0	.00	.00	.00
23	.00	.00	.00	.00	54	49	7.8	40	3.5	.00	.00	.00
24	.00	.00	.00	.00	45	57	7.0	25	2.0	.00	.00	.00
25	.00	.00	.00	.00	40	34	5.0	17	1.2	.00	.00	.00
26	.00	.00	.00	.00	35	28	3.0	63	1.0	.00	.00	.00
27	.00	.00	.00	.00	35	27	1.0	30	.70	.00	.00	.00
28	.00	.00	.00	.00	40	31	.50	15	.50	.00	.00	.00
29	.00	.00	.00	.00	---	32	.20	10	.30	.00	.00	.00
30	.00	.00	.00	.00	---	88	.10	200	.20	.00	.00	.00
31	.00	---	.00	.00	---	299	---	141	---	.00	.00	---
TOTAL	.00	.00	.00	.00	445.00	1811	793.90	1784.22	790.40	.18	.00	18.11
MEAN	.000	.000	.000	.000	15.9	58.4	26.5	57.6	26.3	.006	.000	.60
MAX	.00	.00	.00	.00	126	299	253	465	190	.10	.00	7.6
MIN	.00	.00	.00	.00	.00	27	.10	.00	.20	.00	.00	.00
AC-FT	.00	.00	.00	.00	883	3590	1570	3540	1570	.4	.00	36

CAL YR 1981 TOTAL 212.77 MEAN .58 MAX 111 MIN .00 AC-FT 422
WTR YR 1982 TOTAL 5642.81 MEAN 15.5 MAX 465 MIN .00 AC-FT 11190

06446000 WHITE RIVER NEAR OGLALA, SD

LOCATION.--Lat 43°15'17", long 102°49'29", in SW¼NE¼ sec.24, T.38 N., R.47 W., Shannon County, Hydrologic Unit 10140201, on right bank at downstream side of bridge, 3.0 mi (4.8 km) downstream from Blacktail Creek and 7.0 mi (11.3 km) northwest of Oglala.

DRAINAGE AREA.--2,200 mi^2 (5,700 km^2), approximately.

PERIOD OF RECORD.--May 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,853.54 ft (869.759 m) National Geodetic Vertical Datum of 1929. Prior to May 6, 1947, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are poor. Some diversions for irrigation above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--39 years, 52.7 ft^3/s (1.492 m^3/s), 38,180 acre-ft/yr (47.1 hm^3/yr); median of yearly mean discharges, 44 ft^3/s (1.25 m^3/s), 31,900 acre-ft/yr (39 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft^3/s (147 m^3/s) June 21, 1947, gage height, 23.50 ft (7.163 m), from rating curve extended above 2,800 ft^3/s (79.3 m^3/s) on basis of velocity-area studies; maximum gage height, 23.61 ft (7.196 m) June 16, 1967; no flow at times in 1952, 1954, 1957, 1961, 1964, 1965, 1970-76, 1981, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft^3/s (22.7 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 15	0715	*1330	37.6	*17.28	5.267	May 21	0145	1050	29.7	15.59	4.752
May 17	1400	1310	37.1	17.19	5.240	June 15	0815	1020	28.9	15.08	4.596

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	2.9	10	3.0	13	40	21	22	72	88	10	21
2	.10	3.0	9.6	2.8	11	35	22	19	57	79	10	17
3	.00	3.1	9.6	2.7	7.0	30	24	18	76	60	12	14
4	.00	3.0	10	2.9	6.0	37	23	18	212	54	9.0	12
5	.00	2.5	9.5	2.0	5.0	20	24	18	275	47	8.9	9.8
6	.00	4.9	9.0	1.0	5.8	18	25	16	268	42	7.6	9.1
7	.00	4.6	9.0	.90	6.4	20	26	15	278	39	6.9	7.2
8	.00	4.9	9.0	1.2	6.0	19	28	15	227	38	6.9	5.2
9	.00	5.6	8.5	.60	5.6	26	27	17	139	35	7.1	3.7
10	.00	5.0	9.0	.20	6.0	30	26	17	87	34	6.0	3.1
11	.00	5.2	9.0	.60	7.0	35	26	13	77	34	11	6.1
12	.00	5.3	9.0	1.0	8.0	36	25	12	105	33	14	6.6
13	.00	6.1	8.8	1.2	9.0	37	25	22	70	34	9.9	4.8
14	.00	8.7	8.5	1.4	10	38	25	443	271	37	11	5.7
15	1.1	8.6	8.8	1.0	12	42	25	1030	707	37	11	5.3
16	5.5	7.9	8.5	.60	15	42	22	637	287	31	10	4.8
17	3.1	8.0	8.0	1.0	17	33	22	1020	322	38	7.1	21
18	1.8	11	7.5	1.4	20	28	23	871	336	30	17	16
19	1.1	11	6.0	1.2	24	24	20	480	233	27	21	30
20	.87	9.6	7.0	1.0	30	23	18	534	175	22	24	21
21	1.1	12	6.6	.80	40	20	16	826	164	14	12	12
22	.90	13	6.2	.60	45	21	15	496	128	10	7.9	9.8
23	.77	14	5.6	.80	40	17	15	487	102	7.7	12	15
24	.76	14	5.6	5.0	45	17	16	346	91	6.8	25	12
25	.62	13	5.8	8.0	38	16	16	166	76	6.4	58	10
26	.54	11	5.8	15	40	21	15	113	184	15	131	8.0
27	.56	10	5.6	14	38	19	16	95	224	47	116	3.0
28	.94	10	5.0	14	42	19	17	79	176	20	70	1.1
29	.15	10	4.0	13	---	20	19	116	122	16	38	.15
30	.30	10	3.5	12	---	22	22	136	99	18	25	.00
31	3.9	---	3.0	13	---	22	---	100	---	13	27	---
TOTAL	24.16	237.9	231.0	123.90	551.8	827	644	8197	5680	1012.9	742.3	294.45
MEAN	.78	7.93	7.45	4.00	19.7	26.7	21.5	264	188	32.7	23.9	9.82
MAX	5.5	14	10	15	45	42	28	1030	707	88	131	30
MIN	.00	2.5	3.0	.20	5.0	16	15	12	57	6.4	6.0	.00
AC-FT	48	472	458	246	1090	1640	1280	16260	11190	2010	1470	584

CAL YR 1981 TOTAL 5927.84 MEAN 16.2 MAX 183 MIN .00 AC-FT 11760
WTR YR 1982 TOTAL 18526.41 MEAN 50.8 MAX 1030 MIN .00 AC-FT 36750

06447000 WHITE RIVER NEAR KADOKA, SD

LOCATION.--Lat 43°45'09", long 101°31'28", in SE¼SE¼ sec.30, T.3 S., R.22 E., Black Hills meridian, Jackson County, Hydrologic Unit 10140202, near center of span on downstream side of bridge on State Highway 73, 5.0 mi (8.0 km) upstream from Pass Creek, 5.5 mi (8.8 km) downstream from Cottonwood Creek, and 5.8 mi (9.3 km) south of Kadoka.

DRAINAGE AREA.--5,000 mi² (13,000 km²), approximately.

PERIOD OF RECORD.--July 1942 to current year.

REVISED RECORDS.--WSP 1279: 1944(M), 1948.

GAGE.--Water-stage recorder. Datum of gage is 2,122.18 ft (646.840 m) National Geodetic Vertical Datum of 1929. Prior to June 14, 1949, nonrecording gage, and June 14, 1949, to Mar. 8, 1955, water-stage recorder at site 0.3 mi (0.5 km) downstream at same datum. Mar. 9, 1955, to May 17, 1957, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter period, which are poor. Some diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--40 years, 276 ft³/s (7.816 m³/s), 200,000 acre-ft/yr (247 hm³/yr); median of yearly mean discharges, 260 ft³/s (7.36 m³/s), 188,000 acre-ft/yr (230 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,700 ft³/s (615 m³/s) June 7, 1951, gage height, 13.83 ft (4.215 m), site then in use, from rating curve extended above 16,000 ft³/s (453 m³/s); maximum gage height, 16.18 ft (4.932 m) May 20, 1982; no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 4, 1942, reached a stage of 16.24 ft (4.950 m) from floodmarks, discharge, about 32,000 ft³/s (906 m³/s), from rating curve extended above 16,000 ft³/s (453 m³/s). Floods of Mar. 8, 1905, and in spring of 1927 were 1 or 2 ft (0.3 or 0.6 m) higher than flood of June 4, 1942, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,600 ft³/s (102 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 18	--	4300	122	ice jam	
May 15	1600	15600	442	14.03	4.276
May 20	0600	*21300	603	*16.18	4.932
May 24	0100	11900	337	12.53	3.819
June 6	0700	7780	220	10.85	3.307
June 14	0800	8240	283	11.05	3.368
July 26	1900	8030	227	10.96	3.341

No flow Oct. 1, Jan. 10-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	20	12	4.5	19	313	549	42	240	190	295	355
2	6.8	17	12	4.0	17	248	355	38	240	335	240	317
3	18	12	12	3.5	16	103	142	37	257	2090	190	180
4	35	14	12	3.5	15	99	88	32	331	800	169	160
5	116	13	13	3.0	15	154	100	42	826	300	176	145
6	79	12	13	3.0	15	198	120	42	2950	170	176	140
7	213	14	13	2.5	16	150	148	42	1500	131	441	133
8	201	13	13	2.0	17	101	183	42	1160	110	395	97
9	110	12	14	1.0	16	133	236	37	741	126	461	97
10	86	14	14	.00	25	166	514	32	519	88	355	97
11	71	14	13	.00	40	163	735	55	374	82	244	97
12	60	14	12	.00	70	322	543	457	322	75	217	151
13	57	13	11	.50	100	345	331	2870	280	71	187	253
14	68	13	10	1.0	150	265	180	13500	4000	156	291	336
15	106	15	10	2.0	250	209	115	14700	3760	1050	340	543
16	99	17	9.5	1.5	500	148	88	10800	2080	416	322	606
17	99	16	9.5	1.5	1000	148	71	4130	1370	166	236	269
18	84	15	10	2.0	3500	133	58	1890	943	100	190	123
19	63	15	11	2.0	3000	133	52	1630	1060	71	655	88
20	52	15	11	1.8	2190	180	48	12900	640	63	422	73
21	55	15	12	1.6	1860	130	48	7040	400	57	278	60
22	52	27	11	1.5	1520	132	75	3340	291	49	230	48
23	37	40	10	1.5	1120	341	54	2610	217	238	217	35
24	41	40	9.0	2.0	490	490	51	5410	176	420	414	25
25	37	40	8.0	5.0	461	350	42	1760	190	761	232	27
26	33	26	7.5	20	374	253	34	905	240	4540	173	27
27	32	12	7.0	25	369	217	42	715	166	2910	145	27
28	36	12	6.5	24	340	217	48	473	150	933	120	27
29	30	12	6.0	22	---	163	47	574	142	455	118	13
30	24	13	5.5	20	---	556	47	406	176	300	158	27
31	22	---	5.0	20	---	1570	---	308	---	322	269	---
TOTAL	2022.80	525	322.5	181.90	17505	8130	5144	86859	25741	17575	8356	4576
MEAN	65.3	17.5	10.4	5.87	625	262	171	2802	858	567	270	153
MAX	213	40	14	25	3500	1570	735	14700	4000	4540	655	606
MIN	.00	12	5.0	.00	15	99	34	32	142	49	118	13
AC-FT	4010	1040	640	361	34720	16130	10200	172300	51060	34860	16570	9080

CAL YR 1981 TOTAL 42361.72 MEAN 116 MAX 4230 MIN .00 AC-FT 84020
WTR YR 1982 TOTAL 176938.20 MEAN 485 MAX 14700 MIN .00 AC-FT 351000

06447500 LITTLE WHITE RIVER NEAR MARTIN, SD

LOCATION.--Lat 43°10'00", long 101°37'47", in NW¼ sec.19, T.37 N., R.36 W., Bennett County, Hydrologic Unit 10140203, on right bank 70 ft (21 m) downstream from highway culvert and 5.4 mi (8.7 km) east of Martin.

DRAINAGE AREA.--310 mi² (803 km²), approximately, of which about 230 mi² (596 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year. Prior to October 1965, published as South Fork White River near Martin.

GAGE.--Water-stage recorder. Altitude of gage is 3,045 ft (928 m), by barometer. Prior to Aug. 14, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period and those for periods of no gage-height record, Oct. 12 to Nov. 16 and July 1-26, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--22 years, 18.9 ft³/s (0.535 m³/s), 13,690 acre-ft/yr (16.9 hm³/s); median of yearly mean discharges, 18 ft³/s (0.51 m³/s), 13,000 acre-ft/yr (16 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,190 ft³/s (33.7 m³/s) July 19, 1965, gage height, 12.90 ft (3.932 m), from rating curve extended above 340 ft³/s (9.63 m³/s) on basis of computation of peak flow through culvert and flow-over-road measurement of peak flow; maximum gage height, 13.21 ft (4.026 m) Mar. 11, 1966 (backwater from ice); minimum daily discharge, 0.6 ft³/s (0.017 m³/s) Aug. 14, 16, 18, 1940; no flow for part of each day Oct. 19, 20, 22, 1962, regulation caused by construction work above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 5, 1932, reached a stage of 13.3 ft (4.05 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 15	1000	155	4.39	5.21	1.588	May 19	2100	*158	4.48	*5.26	1.603

Minimum daily discharge, 3.2 ft³/s (0.09 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	14	20	7.0	4.5	25	40	17	37	13	7.8	6.2
2	9.0	14	12	6.0	4.0	25	40	17	32	14	7.6	6.6
3	9.1	15	16	6.0	4.0	25	39	17	32	16	7.3	6.7
4	9.2	15	17	5.0	4.5	30	30	16	42	17	7.0	6.4
5	10	15	12	5.0	6.0	35	27	15	46	16	6.8	6.4
6	11	16	17	4.5	6.0	33	27	15	46	16	6.8	6.4
7	12	15	16	4.5	5.5	35	24	15	47	16	6.6	6.8
8	11	15	20	4.0	5.5	30	27	15	41	17	6.4	6.7
9	12	16	19	4.0	5.0	29	25	15	35	14	6.3	6.8
10	12	15	17	3.2	6.0	32	26	15	32	12	6.9	6.9
11	11	15	16	3.5	7.0	50	29	18	31	12	6.6	6.8
12	12	15	16	3.5	10	36	36	48	27	11	6.6	7.6
13	13	14	15	3.8	15	39	35	89	24	11	6.7	8.1
14	13	14	15	4.0	25	31	32	119	27	12	7.1	9.3
15	13	14	13	4.0	40	28	28	141	31	13	6.8	9.9
16	14	13	12	3.5	50	27	24	80	27	12	6.3	10
17	13	13	11	3.5	55	27	22	78	23	11	6.2	11
18	12	14	12	4.0	50	29	20	100	24	12	6.1	11
19	11	14	13	4.5	40	31	19	144	23	10	6.0	11
20	11	14	14	4.5	35	32	18	116	23	10	5.7	10
21	11	17	14	4.3	30	35	18	63	21	9.5	5.7	9.9
22	12	15	13	4.0	30	31	18	50	19	9.5	5.6	9.6
23	11	16	13	4.0	30	29	19	49	18	9.0	5.6	9.6
24	11	16	12	4.5	29	35	19	50	21	9.0	5.6	9.5
25	11	16	12	5.0	28	32	18	43	22	9.5	5.7	9.2
26	11	15	11	5.5	28	29	17	41	18	9.0	5.8	9.0
27	11	15	10	5.5	27	26	17	38	17	8.3	5.8	9.0
28	11	15	9.0	5.0	27	25	17	37	15	8.7	5.9	9.0
29	12	17	8.0	5.0	---	24	17	35	14	8.8	5.9	8.8
30	13	15	8.0	4.5	---	25	17	37	13	8.8	5.9	9.1
31	14	---	7.0	4.5	---	31	---	34	---	8.3	6.3	---
TOTAL	355.4	447	420.0	139.8	607.0	951	745	1567	828	363.4	197.4	253.3
MEAN	11.5	14.9	13.5	4.51	21.7	30.7	24.8	50.5	27.6	11.7	6.37	8.44
MAX	14	17	20	7.0	55	50	40	144	47	17	7.8	11
MIN	9.0	13	7.0	3.2	4.0	24	17	15	13	8.3	5.6	6.2
AC-FT	705	887	833	277	1200	1890	1480	3110	1640	721	392	502

CAL YR 1981 TOTAL 4335.9 MEAN 11.9 MAX 23 MIN 3.0 AC-FT 8600
WTR YR 1982 TOTAL 6874.3 MEAN 18.8 MAX 144 MIN 3.2 AC-FT 13640

06449000 LAKE CREEK BELOW REFUGE, NEAR TUTHILL, SD

LOCATION.--Lat 43°08'46", long 101°30'38", in SW¼ sec.30, T.37 N., R.35 W., Bennett County, Hydrologic Unit 10140203, on left bank 400 ft (122 m) downstream from east boundary of LaCreek game refuge, 1.2 mi (1.9 km) southwest of Tuthill and 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--120 mi² (311 km²), approximately, of which about 60 mi² (155 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,055 ft (931 m), by barometer. Prior to Aug. 4, 1938, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow regulated by series of lakes above gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--22 years, 15.7 ft³/s (0.445 m³/s), 11,370 acre-ft/yr (14.0 hm³/yr); median of yearly mean discharges, 16 ft³/s (0.45 m³/s), 11,600 acre-ft/yr (14 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 178 ft³/s (5.04 m³/s) June 18, 1967, gage height, 5.17 ft (1.576 m); maximum gage height, 5.67 ft (1.728 m) Mar. 28, 1975 (backwater from ice); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 94 ft³/s (2.66 m³/s) June 8; maximum gage height, 4.53 ft (1.381 m) Jan. 23 (backwater from beaver dam); minimum daily discharge, 0.03 ft³/s (0.001 m³/s) Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	2.9	3.1	12	24	28	49	25	17	72	7.5	.75
2	.60	2.8	2.7	12	24	27	42	25	17	69	7.8	.40
3	.27	2.4	3.2	12	24	27	37	24	18	63	3.0	.12
4	.15	2.4	3.7	13	24	27	38	24	28	58	4.3	.11
5	.12	2.3	3.5	13	23	27	38	23	34	53	4.3	.20
6	.11	2.4	3.4	13	23	26	38	23	43	54	3.2	.35
7	.09	2.3	3.5	13	23	26	37	23	54	58	4.6	.14
8	.09	2.3	3.5	13	23	26	37	23	94	58	2.2	.23
9	2.8	2.3	7.3	14	23	26	36	23	90	52	1.7	.17
10	4.6	1.8	9.3	14	23	26	37	22	82	43	2.5	.03
11	4.4	1.6	8.6	13	23	25	37	23	80	35	1.8	.23
12	3.5	2.2	8.8	14	23	25	36	23	78	31	4.6	.18
13	3.9	2.2	8.8	14	22	25	33	25	78	27	1.2	.15
14	4.2	2.2	10	13	22	25	32	25	78	23	3.4	.23
15	4.1	2.2	9.1	14	22	24	32	25	78	29	1.5	.27
16	3.7	2.0	11	14	26	24	32	25	77	36	.50	.27
17	3.5	1.8	9.7	13	33	20	32	25	72	24	.93	.31
18	2.8	1.9	9.5	13	33	14	32	25	68	16	.82	.35
19	2.3	1.6	9.7	13	31	13	31	25	67	13	.59	.40
20	3.5	1.6	9.5	13	31	9.1	27	23	67	12	.12	.40
21	3.4	1.8	9.5	13	31	8.8	27	23	68	9.7	.16	.45
22	3.4	1.9	9.7	31	30	22	27	23	68	9.1	.13	.36
23	3.4	2.2	10	80	30	56	26	24	68	9.8	.13	.60
24	3.0	2.4	10	44	30	34	26	24	67	8.0	.17	.37
25	3.4	2.8	10	30	29	34	26	25	66	5.5	.31	.42
26	3.2	2.9	10	26	29	33	26	25	65	12	.31	.38
27	1.8	2.9	10	24	29	34	25	25	67	10	.08	.37
28	1.8	3.0	10	24	28	33	25	24	68	9.3	.18	.64
29	3.2	3.3	11	24	---	33	25	17	72	8.4	.18	.32
30	3.2	3.6	11	24	---	26	25	16	74	7.3	.20	.27
31	3.0	---	11	24	---	32	---	16	---	9.0	.75	---
TOTAL	78.13	70.0	250.1	607	736	815.9	971	721	1903	924.1	59.16	9.47
MEAN	2.52	2.33	8.07	19.6	26.3	26.3	32.4	23.3	63.4	29.8	1.91	.32
MAX	4.6	3.6	11	80	33	56	49	25	94	72	7.8	.75
MIN	.09	1.6	2.7	12	22	8.8	25	16	17	5.5	.08	.03
AC-FT	155	139	496	1200	1460	1620	1930	1430	3770	1830	117	19

CAL YR 1981 TOTAL 3356.89 MEAN 9.20 MAX 56 MIN .09 AC-FT 6660
WTR YR 1982 TOTAL 7144.86 MEAN 19.6 MAX 94 MIN .03 AC-FT 14170

06449100 LITTLE WHITE RIVER NEAR VETAL, SD

LOCATION.--Lat 43°06'03", long 101°13'49", in NE¼NW¼ sec.17, T.36 N., R.33 W., Bennett County, Hydrologic Unit 10140203, on left bank 120 ft (37 m) downstream from highway bridge, 0.3 mi (0.5 km) downstream from small right-bank tributary, 10.8 mi (17.4 km) southeast of Vetal, and 15.3 mi (24.6 km) upstream from Spring Creek.

DRAINAGE AREA.--590 mi² (1,530 km²), approximately, of which about 415 mi² (1,075 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--August 1959 to current year. Prior to October 1965, published as South Fork White River near Vetal.

GAGE.--Water-stage recorder. Datum of gage is 2,780.69 ft (847.554 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 14, 1959, nonrecording gage at same site and datum.

REMARKS.--Records poor. Some small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--23 years, 52.5 ft³/s (1.487 m³/s), 38,040 acre-ft/yr (46.9 hm³/yr); median of yearly mean discharges, 52 ft³/s (1.47 m³/s), 37,700 acre-ft/yr (46 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,330 ft³/s (37.7 m³/s) Mar. 13, 1966, gage height, 7.75 ft (2.362 m); minimum daily, 9.0 ft³/s (0.25 m³/s) Dec. 24, 25, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 250 ft³/s (7.08 m³/s) Feb. 18, gage height, unknown; no other peak above base of 150 ft³/s (4.25 m³/s); minimum daily discharge, 19 ft³/s (0.54 m³/s) Oct. 1, 2, Aug. 28-30, Sept. 2-4, 8.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 14 to Dec. 14, July 27 to Aug. 5;
stage-discharge relation affected by ice Dec. 15 to Feb. 21)

3.4	17
3.6	32
3.8	52
4.0	77
4.2	104

DISCHARGE, IN CUBIC FFET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	32	29	25	20	65	70	56	80	105	40	21
2	19	33	34	25	20	65	70	60	80	110	38	19
3	20	33	42	23	21	65	72	65	85	130	35	19
4	23	33	32	23	22	70	70	60	85	140	34	19
5	27	34	35	22	23	85	70	52	80	130	31	20
6	25	35	40	21	23	80	70	50	83	130	30	20
7	22	36	38	21	22	90	69	50	83	130	28	20
8	22	35	36	20	21	80	68	60	84	120	26	19
9	21	35	37	20	25	73	68	80	90	120	25	35
10	21	36	37	21	40	75	67	70	99	100	23	37
11	23	35	44	22	60	75	68	70	100	90	24	26
12	28	35	45	24	70	80	68	80	95	95	26	42
13	28	34	45	25	90	75	69	120	100	90	25	38
14	30	33	39	24	120	75	68	140	140	95	34	37
15	30	33	35	23	150	75	67	130	135	120	28	38
16	31	32	33	22	200	73	64	135	120	100	25	38
17	32	32	35	22	240	70	64	120	110	105	26	39
18	30	31	38	21	250	69	64	100	110	100	32	49
19	29	31	40	21	200	75	63	100	100	100	27	51
20	25	30	37	20	150	70	63	140	105	90	24	49
21	25	33	35	20	130	80	62	145	110	80	22	49
22	25	36	35	21	120	85	63	140	110	70	22	49
23	27	33	33	21	120	75	63	130	105	70	21	48
24	26	32	32	22	110	65	63	140	105	60	20	47
25	26	31	30	23	100	75	62	120	110	60	20	46
26	25	32	30	24	80	70	61	130	105	55	20	46
27	25	31	29	24	70	70	61	110	100	50	20	44
28	25	31	27	23	70	65	58	110	95	48	19	41
29	25	33	27	23	---	70	57	120	104	46	19	33
30	27	37	26	22	---	70	57	110	105	45	19	25
31	31	---	25	20	---	75	---	90	---	42	21	---
TOTAL	792	997	1080	688	2567	2285	1959	3083	3013	2826	804	1064
MEAN	25.5	33.2	34.8	22.2	91.7	73.7	65.3	99.5	100	91.2	25.9	35.5
MAX	32	37	45	25	250	90	72	145	140	140	40	51
MIN	19	30	25	20	20	65	57	50	80	42	19	19
AC-FT	1570	1980	2140	1360	5090	4530	3890	6120	5980	5610	1590	2110

CAL YR 1981 TOTAL 10705 MEAN 29.3 MAX 52 MIN 12 AC-FT 21230
WTR YR 1982 TOTAL 21158 MEAN 58.0 MAX 250 MIN 19 AC-FT 41970

06449300 LITTLE WHITE RIVER ABOVE ROSEBUD, SD

LOCATION.--Lat 43°15'47", long 100°55'02", in NW¼SE¼ sec.18, T.38 N., R.30 W., Todd County, Hydrologic Unit 10140203, on right bank at downstream side of Lampert bridge, on BIA highway in Crazy Horse Canyon, at Ghost Hawk Park, 3.1 mi (5.0 km) upstream from Rosebud Creek, and 4.6 mi (7.4 km) northwest of Rosebud.

DRAINAGE AREA.--890 mi² (2,305 km²), approximately.

PERIOD OF RECORD.--Oct. 1, 1981, to Sept. 30, 1982.

REMARKS.--Monthly samples of common inorganic constituents collected.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT											
28...	1250	68	270	--	11.5	16	--	<.020	.61	.160	<1
NOV											
18...	0935	74	580	8.6	4.3	16	--	<.020	.58	.160	<1
DEC											
17...	1300	9.9	460	7.2	-1.0	13	--	<.020	.80	.240	1
JAN											
13...	1530	36	347	7.4	.0	9.4	--	<.020	.90	.230	1
FEB											
10...	1110	55	290	7.6	.2	7.8	K25	<.020	1.0	.230	<1
MAR											
09...	1230	131	262	7.8	4.6	38	300	<.020	.44	.270	<1
APR											
07...	1245	114	309	7.1	5.9	--	160	.040	.53	.320	<1
MAY											
05...	0935	102	300	7.7	12.1	87	520	.030	.55	.410	1
JUN											
03...	0830	160	344	7.9	12.1	39	--	.020	.44	--	<1
30...	1000	160	360	8.0	19.6	72	K670	.030	.13	.570	<1
JUL											
28...	0715	104	432	8.7	21.9	40	260	.020	<.10	.320	<1
AUG											
25...	0815	55	307	7.7	16.7	12	200	.020	.47	.180	<1
SEP											
22...	0855	--	--	--	--	--	77	--	--	--	--

< Less than.
K Non-ideal colony count.

06449400 ROSEBUD CREEK AT ROSEBUD, SD

LOCATION.--Lat 43°14'14", long 100°51'26", in SW¼SW¼NE¼ sec.27, T.38 N., R.30 W., Todd County, Hydrologic Unit 10140203, on left bank 40 ft (12 m) upstream from bridge on Spotted Tail Lane in town of Rosebud, 0.4 mi (0.6 km) downstream from small right bank tributary, and 1.0 mi (1.6 km) downstream from Spotted Tail Dam.

DRAINAGE AREA.--50.8 mi^2 (132 km^2), approximately.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,531.91 ft (771.726 m) National Geodetic Vertical Datum of 1929. October 1963 to September 1970, low-flow partial-record station 0.26 mi^2 (0.42 km^2) upstream at different datum.

REMARKS.--Records poor. Flow regulated by Spotted Tail Dam and Indian Scout Lake, combined capacity, about 50 acre-ft (0.06 hm^3), and some small diversions for irrigation of Spotted Tail Golf Course above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--8 years, 7.28 ft^3/s (0.206 m^3/s), 5,270 acre-ft/yr (6.50 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 643 ft^3/s (18.2 m^3/s) July 27, 1976, gage height, 10.34 ft (3.152 m); no flow Apr. 21, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44 ft^3/s (1.25 m^3/s) at 0215 hours, Oct. 11, gage height, 5.97 ft (1.820 m); no flow Apr. 21, 1982.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	2.5	5.0	5.3	5.0	13	13	14	5.0	5.5	3.2	4.2
2	5.5	1.8	5.0	5.2	5.0	11	11	15	9.6	5.7	3.0	3.8
3	5.5	7.8	5.2	5.0	4.5	9.5	8.7	13	13	5.2	2.8	3.4
4	5.5	8.5	5.2	5.0	4.5	9.5	8.1	.55	13	5.2	3.2	3.6
5	6.0	8.0	5.5	4.9	4.0	9.0	8.7	.64	15	4.7	3.4	3.6
6	6.0	7.5	5.5	4.8	4.5	9.0	8.0	.69	12	7.2	3.0	4.0
7	6.1	7.0	6.0	4.8	6.0	10	7.2	3.8	8.4	5.5	2.8	4.3
8	6.2	6.5	6.0	4.7	5.5	10	7.5	5.0	9.0	5.2	2.8	3.8
9	7.2	6.5	6.0	4.5	6.0	11	8.7	8.7	11	4.7	3.0	3.4
10	5.5	6.5	6.5	4.5	7.0	14	8.7	13	11	6.7	4.3	3.4
11	41	7.0	6.0	5.0	8.0	16	7.8	17	13	5.0	4.0	3.8
12	43	7.5	6.0	5.5	9.0	16	7.2	16	10	4.3	4.0	6.7
13	42	7.5	5.8	6.2	10	19	7.0	23	11	4.2	3.6	6.4
14	41	7.0	5.6	6.4	10	13	7.0	18	19	9.0	3.4	6.4
15	40	7.0	5.4	5.5	11	5.7	6.7	13	11	11	3.4	6.2
16	39	6.5	5.4	4.6	10	4.5	18	11	7.5	7.5	3.4	6.0
17	39	6.5	5.2	6.1	11	4.0	23	9.3	7.0	6.7	4.7	5.7
18	21	6.4	5.0	7.0	13	5.0	.18	7.5	8.4	6.7	8.7	4.7
19	3.8	9.6	5.0	5.7	15	11	.08	9.6	7.5	6.2	5.7	5.2
20	2.2	11	5.5	5.5	16	10	14	13	6.7	6.2	4.7	4.7
21	3.6	12	6.0	6.3	15	6.7	.00	14	6.2	6.2	4.3	6.4
22	3.8	12	6.0	4.9	14	3.4	1.3	9.3	6.4	5.0	4.3	10
23	9.6	11	5.8	5.0	13	3.6	1.0	9.3	5.5	5.2	4.5	11
24	7.8	6.7	5.8	4.5	12	3.6	1.2	9.9	7.0	5.2	4.7	16
25	3.0	4.7	5.6	5.0	12	3.0	1.3	7.2	7.0	5.2	5.0	16
26	6.7	5.0	5.6	6.0	12	3.6	3.0	6.7	7.0	7.8	4.2	16
27	5.5	5.0	5.6	6.5	13	4.2	4.5	6.2	6.2	6.7	4.2	17
28	4.7	5.2	5.5	6.0	14	5.7	17	6.4	5.7	6.2	4.3	16
29	3.6	5.5	5.5	6.0	---	7.5	18	8.1	5.5	5.5	4.2	16
30	2.5	5.5	5.5	5.5	---	9.9	16	14	6.2	3.8	4.3	15
31	1.5	---	5.4	5.5	---	7.8	---	6.4	---	3.4	4.5	---
TOTAL	423.8	211.2	173.1	167.4	270.0	269.2	243.86	309.28	270.8	182.6	125.6	232.7
MEAN	13.7	7.04	5.58	5.40	9.64	8.68	8.13	9.98	9.03	5.89	4.05	7.76
MAX	43	12	6.5	7.0	16	19	23	23	19	11	8.7	17
MIN	1.5	1.8	5.0	4.5	4.0	3.0	.00	.55	5.0	3.4	2.8	3.4
AC-FT	841	419	343	332	536	534	484	613	537	362	249	462

CAL YR 1981 TOTAL 2755.80 MEAN 7.55 MAX 54 MIN 1.5 AC-FT 5470
WTR YR 1982 TOTAL 2879.58 MEAN 7.89 MAX 43 MIN .00 AC-FT 5710

06449500 LITTLE WHITE RIVER NEAR ROSEBUD, SD

LOCATION.--Lat 43°19'32", long 100°53'00", in SW¼NW¼ sec.28, T.39 N., R.30 W., Todd County, Hydrologic Unit 10140203, on left bank at downstream side of bridge on U.S. Highway 18, 0.3 mi (0.5 km) downstream from Scabby Creek, 0.7 mi (1.1 km) downstream from Soldier Creek, and 6.4 mi (10.3 km) north of Rosebud.

DRAINAGE AREA.--1,020 mi² (2,640 km²), approximately, of which about 760 mi² (1,970 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--May 1943 to current year. Prior to October 1965, published as South Fork White River near Rosebud.

REVISED RECORDS.--WSP 1056: 1943, drainage area. WSP 1309: 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 2,294.99 ft (699.513 m) National Geodetic Vertical Datum of 1929. Prior to May 11, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are poor. Some small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--39 years, 110 ft³/s (3.115 m³/s), 79,700 acre-ft/yr (98.3 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,640 ft³/s (131 m³/s) June 11, 1967, gage height, 14.09 ft (4.295 m), from rating curve extended above 1,300 ft³/s (36.8 m³/s); minimum daily, 10 ft³/s (0.28 m³/s) Jan. 4, 1949, Feb. 20, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 500 ft³/s (14.2 m³/s) Feb. 19, no other peak above base of 330 ft³/s (9.35 m³/s); maximum gage height, 6.91 ft (2.106 m) Feb. 19 (backwater from ice); minimum daily discharge, 40 ft³/s (1.13 m³/s) Jan. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	88	98	50	50	112	108	91	194	166	98	70
2	78	91	102	50	50	112	106	102	197	176	98	67
3	91	86	78	50	50	112	114	102	202	243	102	58
4	81	82	81	50	55	112	106	124	189	258	91	61
5	86	81	76	45	60	181	104	112	191	234	93	62
6	110	86	82	45	60	156	102	100	219	243	93	62
7	104	89	86	45	55	181	97	78	208	246	82	64
8	82	86	78	40	55	208	100	97	211	249	81	68
9	78	88	81	45	50	181	98	142	189	243	82	68
10	86	91	82	50	50	140	100	112	214	231	71	68
11	82	89	73	55	60	144	104	118	225	131	68	82
12	104	88	91	60	70	144	108	131	216	146	82	71
13	91	84	95	70	90	151	108	161	191	131	82	73
14	84	81	81	80	150	142	110	331	358	140	82	79
15	88	86	78	70	200	140	104	265	271	219	81	78
16	95	82	73	65	250	131	98	287	181	131	79	71
17	86	88	60	60	350	137	106	258	176	154	93	81
18	81	84	65	55	450	135	116	184	178	144	93	78
19	84	95	75	50	500	163	98	171	161	142	89	86
20	88	84	70	50	400	137	114	278	168	137	89	79
21	91	82	70	50	300	173	98	334	173	122	89	81
22	86	86	65	55	237	184	98	278	176	114	70	82
23	95	89	65	55	237	186	102	271	163	124	73	82
24	88	82	60	60	208	114	100	291	163	126	71	88
25	78	81	60	65	208	140	97	262	171	118	62	84
26	88	86	60	70	208	126	100	281	166	124	65	70
27	78	74	60	70	133	129	100	231	161	110	64	71
28	86	81	55	65	112	104	102	219	149	106	58	84
29	81	71	55	60	---	118	98	222	158	118	68	79
30	84	88	55	55	---	116	98	268	163	120	61	88
31	82	---	55	50	---	126	---	189	---	97	61	---
TOTAL	2698	2549	2265	1740	4698	4435	3094	6090	5782	5043	2471	2235
MEAN	87.0	85.0	73.1	56.1	168	143	103	196	193	163	79.7	74.5
MAX	110	95	102	80	500	208	116	334	358	258	102	88
MIN	78	71	55	40	50	104	97	78	149	97	58	58
AC-FT	5350	5060	4490	3450	9320	8800	6140	12080	11470	10000	4900	4430

CAL YR 1981 TOTAL 31594 MEAN 86.6 MAX 262 MIN 55 AC-FT 62670
WTR YR 1982 TOTAL 43100 MEAN 118 MAX 500 MIN 40 AC-FT 85490

06450500 LITTLE WHITE RIVER BELOW WHITE RIVER, SD

LOCATION.--Lat 43°36'04", long 100°44'52", in SW¼NW¼ sec.23, T.42 N., R.29 W., Mellette County, Hydrologic Unit 10140203, on left bank at downstream side of bridge on U.S. Highway 83, 1.3 mi (2.1 km) downstream from Pine Creek and 2.0 mi (3.2 km) north of town of White River.

DRAINAGE AREA.--1,570 mi² (4,070 km²), approximately, of which about 1,310 mi² (3,390 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1965, published as South Fork White River below White River.

GAGE.--Water-stage recorder. Datum of gage is 1,912.78 ft (583.015 m) National Geodetic Vertical Datum of 1929. Prior to June 8, 1968, at site 0.8 mi (1.3 km) downstream at datum 4.50 ft (1.372 m) lower.

REMARKS.--Records good except those for winter period, which are poor. Diurnal fluctuations caused by small powerplant 2.2 mi (3.5 km) upstream. Several small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--33 years, 127 ft³/s (3.597 m³/s), 92,010 acre-ft/yr (113 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft³/s (388 m³/s) June 12, 1967, gage height, 10.02 ft (3.054 m), site and datum then in use; maximum gage height, 11.21 ft (3.417 m) June 7, 1968, site and datum then in use; maximum gage height at present site and datum, 15.46 ft (4.712 m) June 7, 1968, from floodmarks; no flow for parts of several days in 1952, 1954, 1956; minimum daily discharge, 7 ft³/s (0.20 m³/s) July 31, Aug. 31, Sept. 1, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge: 2,410 ft³/s (68.3 m³/s) at 2200 hours, June 14, gage height, 6.21 ft (1.893 m); maximum gage height, 7.33 ft (2.234 m) Feb. 20 (backwater from ice); minimum daily discharge, 40 ft³/s (1.13 m³/s) Dec. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	57	53	60	55	178	156	139	262	139	94	64
2	59	59	49	55	55	206	113	116	244	300	110	64
3	55	69	76	55	55	160	122	113	249	236	102	139
4	84	69	40	55	50	143	124	102	249	143	84	67
5	89	74	48	55	50	232	133	104	236	146	107	53
6	84	71	53	50	55	136	133	94	460	186	102	57
7	71	84	76	50	60	124	130	89	397	153	74	57
8	69	86	69	50	60	122	130	110	303	136	54	62
9	58	74	67	45	55	116	133	102	300	206	71	62
10	59	69	76	45	55	170	133	116	286	186	89	51
11	57	67	67	50	60	251	143	91	305	153	86	71
12	57	67	71	55	65	205	143	116	315	170	71	113
13	79	64	67	60	70	153	153	284	305	198	69	110
14	56	67	53	64	80	136	145	609	1560	190	74	110
15	59	67	50	60	100	124	134	450	1010	186	62	97
16	74	85	45	60	200	119	119	326	310	180	79	113
17	71	104	45	65	300	133	139	262	186	174	64	76
18	67	65	50	60	500	130	136	214	174	133	64	76
19	64	69	60	55	700	176	116	174	178	150	124	91
20	71	74	70	55	750	154	127	262	160	160	49	97
21	76	71	75	50	600	110	139	444	146	160	46	79
22	71	81	70	50	468	107	119	559	139	143	79	89
23	71	91	70	50	262	118	122	391	124	136	76	86
24	74	89	70	55	253	113	133	633	214	160	74	89
25	54	110	65	60	267	145	127	438	253	133	59	84
26	48	59	65	65	227	139	122	295	156	150	51	99
27	48	57	65	70	232	133	124	267	143	133	57	89
28	51	48	65	70	262	124	124	236	183	119	62	89
29	55	42	60	65	---	113	127	267	214	133	51	102
30	59	50	60	60	---	153	133	420	174	122	51	94
31	64	---	60	60	---	133	---	341	---	119	46	---
TOTAL	2018	2139	1910	1759	5946	4556	3932	8164	9235	5033	2311	2530
MEAN	65.1	71.3	61.6	56.7	212	147	131	263	308	162	74.5	84.3
MAX	89	110	76	70	750	251	156	633	1560	300	124	139
MIN	48	42	40	45	50	107	113	89	124	119	46	51
AC-FT	4000	4240	3790	3490	11790	9040	7800	16190	18320	9980	4580	5020

CAL YR 1981 TOTAL 27376 MEAN 75.0 MAX 192 MIN 26 AC-FT 54300
WTR YR 1982 TOTAL 49533 MEAN 136 MAX 1560 MIN 40 AC-FT 98250

06452000 WHITE RIVER NEAR OACOMA, SD

LOCATION.--Lat 43°44'54", long 99°33'22", in SE¼SW¼ sec.3, T.103 N., R.73 W., Lyman County, Hydrologic Unit 10140204, on left bank at downstream side of bridge on State Highway 47, 1.5 mi (2.4 km) downstream from Wagner Draw, 1.8 mi (2.9 km) upstream from high-water line of Lake Francis Case, and 8.8 mi (14.2 km) southwest of Oacoma.

DRAINAGE AREA.--10,200 mi² (26,400 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year.

REVISED RECORDS.--WSP 786: Drainage area. WSP 1309: 1929-30(M).

GAGE.--Water-stage recorder. Datum of gage is 1,377.29 ft (419.798 m) National Geodetic Vertical Datum of 1929. See WSP 1709, 1729, or 1917 for history of changes prior to Feb. 27, 1960.

REMARKS.--Records good except those for winter period, which are poor. Some diversions for irrigation above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--54 years, 526 ft³/s (14.90 m³/s), 381,100 acre-ft/yr (470 hm³/yr); median of yearly mean discharges, 450 ft³/s (12.7 m³/s), 326,000 acre-ft/yr (400 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,900 ft³/s (1,470 m³/s) Mar. 30, 1952, gage height, 15.40 ft (4.694 m), site and datum then in use; maximum gage height, 23.59 ft (7.190 m) Mar. 14, 1978, ice jam; no flow Aug. 14-28, 1971, July 16-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976, July 23 to Aug. 7, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,500 ft³/s (156 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 22	1100	5500	156	ab*19.12	5.828	May 30	1500	7460	211	8.36	2.548
May 17	2030	14900	422	10.17	3.100	June 8	0800	9400	266	8.92	2.719
May 22	0500	*20600	583	11.96	3.645	June 16	1000	15000	425	10.18	3.103
May 25	1600	16300	462	11.21	3.417	July 28	2100	8100	229	8.55	2.606

a Backwater from ice.
b From graph based on observer's gage readings.
Minimum daily discharge, 10 ft³/s (0.28 m³/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	71	55	15	35	1800	661	180	2390	2510	740	166
2	35	70	37	15	33	1700	1030	165	2540	1690	515	134
3	35	68	35	14	32	1600	1770	149	1860	1200	361	107
4	46	70	35	13	31	1400	899	147	1120	1610	284	101
5	59	71	37	13	30	1200	668	134	640	627	229	101
6	62	71	38	12	30	500	594	122	690	2300	209	139
7	58	70	40	12	31	450	498	105	740	1570	205	209
8	59	65	40	11	32	800	475	120	6430	841	142	160
9	62	65	42	11	32	900	447	127	3020	533	139	120
10	64	67	45	10	31	600	458	122	2340	380	142	92
11	166	67	43	11	31	500	521	130	1800	310	127	94
12	212	68	40	12	40	650	515	160	1420	240	112	149
13	202	68	35	14	60	750	453	202	841	288	226	122
14	171	64	30	17	100	800	442	1970	865	243	292	94
15	142	65	27	20	150	1500	793	10200	740	180	230	118
16	132	64	26	19	200	1600	696	12700	11700	160	152	116
17	125	64	25	18	300	1300	575	14200	9110	144	142	122
18	95	64	25	20	500	1000	470	11100	7730	130	122	196
19	94	60	27	30	700	700	366	5350	4110	592	122	356
20	86	53	28	37	1000	700	302	5380	2040	442	180	426
21	99	50	30	40	2000	650	295	11600	1990	243	132	400
22	116	52	30	37	4500	1000	280	17900	1200	209	105	299
23	122	54	28	35	5000	2000	250	10400	1200	183	174	268
24	130	55	26	35	4500	2110	222	6550	882	134	581	233
25	118	60	25	40	3500	1450	205	10800	588	105	385	183
26	103	55	23	45	3000	916	186	6800	458	83	498	172
27	92	55	21	45	2500	948	180	3800	370	73	295	160
28	95	60	20	43	2000	1060	177	2730	329	2300	219	149
29	79	70	18	40	---	817	171	1580	290	3790	307	130
30	81	86	17	37	---	725	186	4750	325	1760	216	118
31	76	---	16	35	---	696	---	3500	---	1100	190	---
TOTAL	3055	1922	964	756	30398	32822	14825	143173	69758	25970	7773	5236
MEAN	98.5	64.1	31.1	24.4	1086	1059	494	4618	2325	838	251	175
MAX	212	86	55	45	5000	2110	1770	17900	11700	3790	740	426
MIN	35	50	16	10	30	450	171	105	290	73	105	92
AC-FT	6060	3810	1910	1500	60290	65100	29410	284000	138400	51510	15420	10390

CAL YR 1981 TOTAL 76319 MEAN 209 MAX 4520 MIN 16 AC-FT 151400
WTR YR 1982 TOTAL 336652 MEAN 922 MAX 17900 MIN 10 AC-FT 667700

06452000 WHITE RIVER NEAR OACOMA, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1969, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1976, October 1977 to Sept. 30, 1981.
WATER TEMPERATURES: October 1974 to September 1976, October 1978 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976, Oct. 1, 1981, to Sept. 30, 1982.

REMARKS.--Sediment-discharge records fair. Flow affected by ice Nov. 19-22, 24-29, Dec. 3 to Mar. 23. Sediment-discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,950 micromhos Aug. 8, 1980; minimum daily, 370 micromhos Mar. 17, 1975.
WATER TEMPERATURES: Maximum daily, 30.0°C July 30, 1975, July 10, 1976, July 10, 1980; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 72,300 mg/L Apr. 15, 1974; minimum daily mean, 0 mg/L July 17-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976.
SEDIMENT LOADS: Maximum daily, 1,640,000 tons (1,490,000 tonnes) May 17, 1982; 0 ton (0 tonne) July 17-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 27.0°C July 20, Aug. 2, 5, 6; minimum daily, 0.0°C on many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 42,900 mg/L May 17; minimum daily mean, 15 mg/L Feb. 1.
SEDIMENT LOADS: Maximum daily, 1,640,000 tons (1,490,000 tonnes) May 17; minimum daily, 1.4 ton (1.3 tonne) Feb. 1.

CORRECTION.--The sample on Nov. 13, 1974, at 1630 hours was in error.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
OCT											
09...	1200	62	--	--	--	--	--	--	--	--	--
NOV											
20...	1000	53	455	7.7	.5	110	--	63	100	134	0
JAN											
20...	1245	37	528	7.8	2.0	21	12.2	K9	80	163	0
MAR											
23...	1050	2000	--	--	--	--	--	--	--	--	--
29...	1100	825	--	--	3.0	--	--	--	--	--	--
30...	1050	732	--	--	2.0	--	--	--	--	--	--
31...	1100	703	--	--	2.0	--	--	--	--	--	--
APR											
01...	1050	654	--	--	3.0	--	--	--	--	--	--
02...	1105	588	--	--	--	--	--	--	--	--	--
03...	1100	1770	--	--	1.0	--	--	--	--	--	--
05...	1100	661	--	--	2.0	--	--	--	--	--	--
06...	1045	608	--	--	1.0	--	--	--	--	--	--
12...	1100	545	667	8.0	11.5	5600	8.7	<3	K18	103	0
MAY											
07...	1025	108	520	8.2	11.0	190	10.0	K30	K82	123	0
JUN											
04...	1340	1000	557	7.8	18.5	--	7.5	--	--	--	--
JUL											
02...	1030	1850	--	--	22.0	--	--	--	--	--	--
29...	1320	3030	566	7.8	25.0	34000	6.5	93	K80	75	0
AUG											
26...	1215	583	520	7.9	22.5	--	7.2	210	250	--	--
SEP											
20...	1135	416	--	--	13.0	--	--	--	--	--	--

< Less than.
K Non-ideal colony count.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT											
09...	--	--	--	--	--	--	--	--	--	--	--
NOV											
20...	45	5.3	49	43	1.9	5.7	57	160	15	.5	45
JAN											
20...	52	8.0	39	33	1.4	8.7	22	220	4.8	.5	67
MAR											
23...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
12...	34	4.4	120	70	5.4	7.3	170	160	16	.5	27
MAY											
07...	42	4.3	72	55	3.0	6.2	83	190	8.1	.6	38
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	--	--	--	--	--	--	--	--	--	--	--
29...	26	2.5	110	74	5.8	6.6	120	176	7.6	.7	71
AUG											
26...	--	--	--	--	--	--	--	--	--	--	--
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
OCT											
09...	--	--	--	--	--	--	--	--	--	--	--
NOV											
20...	309	319	.42	44.2	.46	.150	.19	1.40	.050	.140	.43
JAN											
20...	346	330	.47	34.6	1.0	.200	.26	.81	.180	.210	.64
MAR											
23...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
12...	470	475	.64	692	--	--	--	--	--	--	--
MAY											
07...	373	369	.51	109	<.10	.090	.12	1.80	.090	.410	1.3
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	--	--	--	--	--	--	--	--	--	--	--
29...	491	454	.67	4020	1.4	<.060	.08	38.0	.160	4.40	14
AUG											
26...	--	--	--	--	1.2	.200	.26	5.20	.250	2.20	6.7
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

< Less than.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)
NOV 20...	1000	11	1	10	<1	--	2	10	--	<10	4
JAN 20...	1245	10	1	9	1	0	2	10	--	<10	<1
MAY 07...	1025	12	1	11	<1	--	<3	10	0	10	3
JUL 29...	1320	160	140	18	<1	--	<1	160	150	10	64

DATE	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
NOV 20...	--	<3	8	0	11	5100	30	5	0	7	140
JAN 20...	--	<3	8	0	8	1400	16	4	2	2	40
MAY 07...	--	<1	13	4	9	6800	<9	9	--	<1	280
JUL 29...	--	<1	290	280	9	120000	3000	360	350	6	16000

DATE	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
NOV 20...	130	11	.2	.0	.3	1	0	1	50	8	42
JAN 20...	30	7	.4	.2	.2	1	0	1	40	20	16
MAY 07...	280	3	.5	.1	.4	2	1	1	40	--	<12
JUL 29...	16000	170	1.6	--	<.1	7	2	5	740	730	13

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL (UG/L) (39570)
NOV 20...	1000	--	.0	--	.0	--	.0	--	.0	--	.0	--
APR 12...	1100	<.01	--	<.10	--	<.01	--	<.01	--	<.01	--	<.01
JUN 04...	1340	<.01	--	<.10	--	<.01	--	<.01	--	<.01	--	<.01

DATE	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)
NOV 20...	--	.0	--	.0	--	--	.0	--	.0	--	.0	--
APR 12...	<.01	--	<.01	--	<.01	<.01	--	<.01	--	<.01	--	<.01
JUN 04...	<.01	--	<.01	--	<.01	<.01	--	<.01	--	<.01	--	<.01

< Less than.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
NOV											
20...	--	.0	--	--	--	--	.0	--	--	--	--
APR											
12...	<.01	--	<.01	<.01	<.01	<1	--	<.01	.02	<.01	<.01
JUN											
04...	<.01	--	<.01	<.01	<.01	<1	--	<.01	.06	<.01	<.01

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	---	.0	---	.0	---	3.0	11.0	15.0	19.0	---	22.0
2	11.0	7.0	.0	.0	.0	---	2.0	---	17.0	23.0	27.0	21.0
3	12.0	9.0	.0	---	.0	---	1.0	21.0	16.0	24.0	24.0	19.0
4	---	10.0	.0	.0	.0	---	---	19.0	17.0	---	26.0	23.0
5	12.0	10.0	.0	.0	.0	---	2.0	20.0	18.0	23.0	27.0	---
6	11.0	5.0	---	.0	.0	---	1.0	21.0	---	22.0	27.0	---
7	11.0	6.0	.0	.0	---	---	1.0	21.0	16.0	22.0	25.0	19.0
8	12.0	---	.0	.0	.0	---	4.0	20.0	17.0	24.0	---	21.0
9	12.0	3.0	.0	.0	.0	---	6.0	---	15.0	22.0	19.0	22.0
10	12.0	5.0	.0	---	.0	---	7.0	20.0	16.0	23.0	20.0	20.0
11	---	6.0	.0	.0	.0	---	---	20.0	18.0	---	19.0	18.0
12	11.0	6.0	.0	.0	.0	---	11.0	18.0	18.0	24.0	20.0	---
13	10.0	8.0	---	.0	.0	---	11.0	19.0	---	24.0	23.0	15.0
14	9.0	5.0	.0	.0	---	---	12.0	17.0	20.0	25.0	24.0	12.0
15	8.0	---	.0	.0	.0	---	11.0	15.0	17.0	25.0	---	11.0
16	10.0	6.0	.0	.0	.0	---	10.0	---	20.0	26.0	25.0	14.0
17	9.0	8.0	.0	---	.0	---	10.0	15.0	21.0	23.0	26.0	14.0
18	---	5.0	.0	.0	1.0	---	---	16.0	19.0	---	25.0	13.0
19	8.0	.0	.0	.0	2.0	---	9.0	18.0	19.0	24.0	26.0	---
20	7.0	.0	---	.0	3.0	---	8.0	16.0	---	27.0	24.0	12.0
21	6.0	.0	.0	.0	---	---	9.0	13.0	21.0	24.0	20.0	11.0
22	2.0	---	.0	.0	---	5.5	10.0	15.0	21.0	26.0	---	13.0
23	2.0	.0	.0	.0	---	4.0	12.0	---	23.0	26.0	22.0	14.0
24	3.0	2.0	.0	---	---	3.0	16.0	14.0	21.0	26.0	20.0	14.0
25	---	1.0	---	.0	---	2.0	---	17.0	19.0	---	21.0	11.0
26	6.0	---	.0	.0	---	1.0	12.0	16.0	21.0	23.0	25.0	---
27	7.0	1.0	---	1.0	---	2.0	10.0	17.0	---	24.0	18.0	16.0
28	11.0	2.0	.0	.0	---	---	9.0	19.0	24.0	24.0	20.0	17.0
29	11.0	---	.0	1.0	---	3.0	8.0	20.0	19.0	23.0	---	13.0
30	11.0	1.0	.0	1.0	---	2.0	10.0	---	19.0	23.0	21.0	11.0
31	10.0	---	.0	---	---	2.0	---	---	---	24.0	24.0	---
MEAN	9.0	4.5	.0	.0	.5	2.5	8.0	17.5	18.5	24.0	23.0	16.0

< Less than.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	39	81	8.5	71	4140	794	55	193	29
2	35	84	7.9	70	4120	779	37	188	19
3	35	101	9.5	68	3230	593	35	296	28
4	46	185	23	70	2630	497	35	154	15
5	59	270	43	71	3220	617	37	115	11
6	62	211	35	71	2090	401	38	216	22
7	58	262	41	70	2030	384	40	318	34
8	59	284	45	65	1960	344	40	345	37
9	62	230	39	65	1880	330	42	226	26
10	64	203	35	67	1120	203	45	231	28
11	166	20200	9050	67	780	141	43	595	69
12	212	24500	14000	68	750	138	40	426	46
13	202	24400	13300	68	788	145	35	300	28
14	171	18700	8630	64	535	92	30	175	14
15	142	16200	6210	65	445	78	27	115	8.4
16	132	19200	6840	64	354	61	26	156	11
17	125	13300	4490	64	331	57	25	121	8.2
18	95	9490	2430	64	680	118	25	87	5.9
19	94	5680	1440	60	477	77	27	98	7.1
20	86	6910	1600	53	360	52	28	92	7.0
21	99	6640	1770	50	277	37	30	87	7.0
22	116	6270	1960	52	339	48	30	108	8.7
23	122	9420	3100	54	401	58	28	88	6.7
24	130	7010	2460	55	608	90	26	121	8.5
25	118	7050	2250	60	492	80	25	118	8.0
26	103	7090	1970	55	358	53	23	114	7.1
27	92	6720	1670	55	224	33	21	156	8.8
28	95	4300	1100	60	375	61	20	197	11
29	79	3310	706	70	380	72	18	143	6.9
30	81	3920	857	86	384	89	17	200	9.2
31	76	4150	852	---	---	---	16	179	7.7
TOTAL	3055	---	86971.9	1922	---	6522	964	---	543.2
		JANUARY			FEBRUARY			MARCH	
1	15	114	4.6	35	15	1.4	1800	730	3550
2	15	48	1.9	33	18	1.6	1700	500	2300
3	14	52	2.0	32	18	1.6	1600	310	1340
4	13	56	2.0	31	19	1.6	1400	260	983
5	13	50	1.8	30	29	2.3	1200	210	680
6	12	70	2.3	30	26	2.1	500	200	270
7	12	84	2.7	31	57	4.8	450	200	243
8	11	98	2.9	32	88	7.6	800	200	432
9	11	112	3.3	32	78	6.7	900	1400	3400
10	10	118	3.2	31	99	8.3	600	1040	1680
11	11	125	3.7	31	82	6.9	500	270	364
12	12	139	4.5	40	89	9.6	650	600	1050
13	14	137	5.2	60	91	15	750	390	790
14	17	132	6.1	100	126	34	800	260	562
15	20	124	6.7	150	161	65	1500	570	2310
16	19	117	6.0	200	170	92	1600	710	3070
17	18	110	5.3	300	173	140	1300	560	1970
18	20	102	5.5	500	314	424	1000	590	1590
19	30	94	7.6	700	784	1480	700	680	1290
20	37	87	8.7	1000	800	2160	700	960	1810
21	40	45	4.9	2000	2100	11300	650	1390	2440
22	37	92	9.2	4500	5600	68000	1000	1700	4590
23	35	36	3.4	5000	4150	56000	2000	2450	13200
24	35	39	3.7	4500	2800	34000	2110	3500	19900
25	40	42	4.5	3500	1750	16500	1450	3190	12500
26	45	36	4.4	3000	1100	8910	916	3130	7740
27	45	36	4.4	2500	1050	7090	948	7350	18800
28	43	33	3.8	2000	900	4860	1060	14800	42400
29	40	23	2.5	---	---	---	817	12200	26900
30	37	24	2.4	---	---	---	725	10600	20700
31	35	20	1.9	---	---	---	696	9200	17300
TOTAL	756	---	131.1	30398	---	211124.5	32822	---	216154

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	661	8900	15900	180	832	404	2390	3600	23200
2	1030	11500	32000	165	810	361	2540	4200	28800
3	1770	34200	163000	149	784	315	1860	4200	21100
4	899	28900	70100	147	846	336	1120	4400	13300
5	668	27600	49800	134	570	206	640	3700	6390
6	594	26300	42200	122	562	185	690	3500	6520
7	498	16900	22700	105	510	145	740	3700	7390
8	475	15700	20100	120	462	150	6430	13700	238000
9	447	15700	18900	127	452	155	3020	16500	135000
10	458	11400	14100	122	442	146	2340	17700	112000
11	521	10200	14300	130	544	191	1800	16700	81200
12	515	10500	14600	160	547	236	1420	10200	39100
13	453	7350	8990	202	1100	600	841	8800	20000
14	442	7200	8590	1970	22200	118000	865	9700	22700
15	793	11700	25100	10200	34400	947000	740	7700	15400
16	696	12600	23700	12700	39600	1360000	11700	24000	758000
17	575	12300	19100	14200	42900	1640000	9110	23300	573000
18	470	10400	13200	11100	33800	1010000	7730	22700	474000
19	366	8590	8490	5350	27800	402000	4110	18000	200000
20	342	7540	6960	5360	24800	360000	2040	12400	68300
21	295	5620	4480	11600	24600	770000	1990	10600	57000
22	280	5050	3820	17900	28200	1360000	1200	8100	26200
23	250	3170	2140	10400	22000	618000	1200	7900	25600
24	222	4100	2460	6550	19700	348000	882	6000	14300
25	205	3140	1740	10800	26800	781000	588	6000	9530
26	186	2180	1090	6800	27100	498000	458	6850	8470
27	180	1770	860	3800	16900	173000	370	6000	5990
28	177	1530	731	2730	15700	116000	329	4650	4130
29	171	1440	665	1580	12100	51600	290	2900	2270
30	186	1130	567	4750	14000	180000	325	2600	2280
31	---	---	---	3500	5100	48200	---	---	---
TOTAL	14825	---	610383	143173	---	10784230	69758	---	2999170
		JULY			AUGUST			SEPTEMBER	
1	2510	7900	53500	740	31200	62300	166	18200	8160
2	1690	6250	28500	515	24600	34200	134	11000	3980
3	1200	4100	13300	361	19200	18700	107	6800	1960
4	1610	8050	35000	284	15500	11900	101	5200	1420
5	627	8000	13500	229	12500	7730	101	4650	1270
6	2300	19500	121000	209	10300	5810	139	5600	2100
7	1570	20300	86100	205	9000	4980	209	7500	4230
8	841	17400	39500	142	7900	3030	160	8750	3780
9	533	15600	22400	139	6600	2480	120	6900	2240
10	380	8800	9030	142	5250	2010	92	2900	720
11	310	8000	6700	127	4700	1610	94	2000	508
12	240	7750	5020	112	3800	1150	149	3700	1490
13	288	7000	5440	226	5200	3170	122	2300	758
14	243	7100	4660	292	7900	6230	94	1350	343
15	180	6600	3210	230	8300	5150	118	1650	526
16	160	5900	2550	152	8200	3370	116	3000	940
17	144	5200	2020	142	9350	3580	122	3000	988
18	130	4600	1610	122	9000	2960	196	3500	1850
19	592	21600	34500	122	7900	2600	358	16100	15600
20	442	22600	27000	180	7400	3600	426	20700	23800
21	243	18000	11800	132	8100	2890	400	20500	22100
22	209	12000	6770	105	7600	2150	299	18700	15100
23	183	8600	4250	174	9750	4580	268	18300	13200
24	134	4100	1480	581	13100	20500	233	16600	10400
25	105	3900	1110	385	18400	19100	183	15000	7410
26	83	3700	829	498	18100	24300	172	13200	6130
27	73	2800	552	295	9400	7490	160	11400	4920
28	2300	14000	86900	219	7250	4290	149	9550	3840
29	3790	42000	430000	307	18000	14900	130	8500	2980
30	1760	41200	196000	216	16800	9800	118	7500	2390
31	1100	37800	112000	190	21400	11000	---	---	---
TOTAL	25970	---	1366231	7773	---	307560	5236	---	165133

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
09...	1200	62	266	45	96	--	--	--	--	--	--	--
NOV												
20...	1000	53	--	--	--	--	--	--	--	--	--	--
JAN												
20...	1245	37	--	--	--	--	--	--	--	--	--	--
MAR												
23...	1050	2000	39100	211000	--	45	46	62	93	94	97	100
29...	1100	825	12800	28500	--	73	82	94	99	100	100	--
30...	1050	732	9530	18800	99	80	87	94	--	--	--	--
31...	1100	703	9230	17500	99	79	87	97	--	--	--	--
APR												
01...	1050	654	9170	16200	99	80	86	96	--	--	--	--
02...	1105	588	35000	55600	--	56	56	80	97	99	100	100
03...	1100	1770	35800	171000	--	57	59	79	96	98	99	100
05...	1100	661	28200	50300	100	81	90	99	--	--	--	--
06...	1045	608	28400	46600	100	81	89	98	--	--	--	--
12...	1100	545	11500	16900	100	--	--	--	100	--	--	--
MAY												
07...	1025	108	501	146	--	--	--	--	100	--	--	--
JUN												
04...	1340	1000	5010	13500	--	--	--	--	99	99	100	--
JUL												
02...	1030	1850	7040	35200	--	--	--	--	76	81	89	98
29...	1320	3030	--	--	--	--	--	--	--	--	--	--
AUG												
26...	1215	583	19600	30900	99	--	--	--	--	--	--	--
SEP												
20...	1135	416	19200	21600	100	--	--	--	--	--	--	--

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD

LOCATION.--Lat 43°04'05", long 98°33'15", in SE¼ sec.5, T.95 N., R.65 W., Charles Mix County, Hydrologic Unit 10140101, in tower 6 of outlet works at Fort Randall Dam, on Missouri River at Pickstown, 1.0 mi (1.6 km) upstream from Randall Creek, and at mile 880.0 (1,415.9 km).

DRAINAGE AREA.--263,500 mi^2 (682,500 km^2), approximately.

STAGE-CONTENTS RECORDS

PERIOD OF RECORD.--December 1952 to current year (monthend contents only). Prior to October 1964, published as Fort Randall Reservoir at Pickstown.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Mar. 25, 1953, elevations determined from temporary nonrecording gages.

REMARKS.--Reservoir is formed by earthfill dam; storage began in December 1952; initial closure made July 1952. Maximum capacity, 5,603,000 acre-ft (6,910 hm^3) below elevation 1,375.0 ft (419.10 m), top of spillway gates. Normal maximum, 4,619,000 acre-ft (5,700 hm^3) below elevation 1,365.0 ft (416.05 m). Inactive storage, 1,178,000 acre-ft (1,450 hm^3) below elevation 1,310.0 ft (399.29 m). No dead storage; elevation of invert of lowest outlet is 1,227.0 ft (373.99 m). Figures given herein represent elevations at outlet works and total contents adjusted for wind effect.

The spillway consists of 21 taintor gates, each 40 ft (12.2 m) wide by 29 ft (8.8 m) high; spillway capacity, 490,000 ft^3/s (13,900 m^3/s) at pool elevation 1,375 ft (419.10 m). Crest of spillway is at elevation 1,346 ft (410.26 m). Normal releases are through 12 tunnels 22 ft (6.7 m) in diameter. Installation of power units in 8 of these tunnels was completed in January 1956; maximum release through power tunnels is 46,000 ft^3/s (1,300 m^3/s); maximum release through 4 other tunnels is 130,000 ft^3/s (3,680 m^3/s) at pool elevation 1,375 ft (419.10 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,087,000 acre-ft (6,270 hm^3) June 20, 1962, affected by wind; minimum since initial filling, 1,450,000 acre-ft (1,790 hm^3) Oct. 23, 1956, affected by wind.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,088,000 acre-ft (5,040 hm^3) May 27; minimum contents, 2,339,000 acre-ft (2,880 hm^3) Nov. 3.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents
Sept. 30	1349.58	3263000	
Oct. 31	1338.65	2502000	-761000
Nov. 30	1336.71	2383000	-119000
Dec. 31	1340.97	2652000	+269000
CAL YR 1981			-109000
Jan. 31	1347.12	3088000	+436000
Feb. 28	1352.29	3485000	+397000
Mar. 31	1356.33	3823000	+338000
Apr. 30	1354.99	3720000	-103000
May 31	1358.55	4035000	+315000
June 30	1355.67	3772000	-263000
July 31	1354.80	3684000	-88000
Aug. 31	1355.40	3744000	+60000
Sept. 30	1356.07	3807000	+63000
WTR YR 1982			+544000

NOTE.--Reservoir frozen over Jan. 2 to Mar. 26.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

INITIAL DATE	81/10/07	81/10/07	81/10/07	81/10/07	81/10/07	81/10/07	81/10/07	81/10/07
INITIAL TIME-DEPTH-BOTTOM	1100 0000	1100 0006	1100 0016	1100 0032	1100 0065	1100 0098	1100 0118	1100 0005
FINAL DATE								81/10/07
FINAL TIME-NUMBER OF SAMPLES								1140 G
CP-SPACE OR TIME-STATISTICAL FUNC								CP-S
00010 WATER TEMP CENT	17.9	18.0	18.1	18.1	18.2	18.1	18.1	
00011 WATER TEMP FAHN	64.2	64.4	64.6	64.6	64.8	64.6	64.6	
00020 AIR TEMP CENT	13.5							
00025 BAROMTRC PRESSURE MM OF HG	737							
00032 CLOUD COVER PERCENT	70							
00035 WIND VELOCITY MPH	27.0							
00036 WIND DIR,FROM NORTH=0	135							
00076 TURB TRBIDMTR HACH FTU								5.0
00077 TRANSP SECCHI INCHES	60							
00094 CNDUCTVY FIELD MICROMHO	831	831	830	829	828	826	825	
00299 DO PROBE MG/L	7.0	7.0	7.4	7.4	7.4	7.4	7.5	
00301 DO SATUR PERCENT	73.7	73.7	77.9	77.9	77.9	77.9	78.9	
00400 PH SU	8.20	8.20	8.20	8.20	8.20	8.20	8.20	
00410 T ALK CACO3 MG/L								165
00515 RESIDUE DISS-105 C MG/L								572
00530 RESIDUE TOT NFLT MG/L								3
00610 NH3+NH4- N TOTAL MG/L								0.010
00619 UN-IONZD NH3-NH3 MG/L								0.000
00620 NO3-N TOTAL MG/L								0.010
00665 PHOS-TOT MG/L P								0.010
00900 TOT HARD CACO3 MG/L								278
00916 CALCIUM CA-TOT MG/L								61.0
00927 MGNSIUM MG,TOT MG/L								30.0
00940 CHLORIDE TOTAL MG/L								11
00945 SULFATE SO4-TOT MG/L								252
32216 CHLRPHYL TOTAL UG/L								24.00
70507 PHOS-T ORTHO MG/L P								0.000
71900 MERCURY HG,TOTAL UG/L								0.3

Analyses by Corps of Engineers.
Tables from STORET.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD

LOCATION.--Lat 43°03'54", long 98°33'11", in NW¼NE¼ sec.8, T.95 N., R.65 W., Charles Mix County, Hydrologic Unit 10170101, in powerhouse of Fort Randall Dam on Missouri River at Pickstown, 0.8 mi (1.3 km) upstream from Randall Creek, and at mile 879.8 (1,415.6 km).

DRAINAGE AREA.--263,500 mi² (682,500 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1947 to current year. Prior to October 1969 published as "below Fort Randall Dam".

GAGE.--Totalizing flowmeters on each turbine in Fort Randall powerhouse. Prior to Nov. 10, 1965, water-stage recorder at site 7.0 mi (11.3 km) downstream at datum 1,230.00 ft (374.904 m) National Geodetic Vertical Datum of 1929 and Nov. 10, 1965, to June 30, 1969, at datum 5.00 ft (1.524 m) lower (Corps of Engineers bench mark).

REMARKS.--Records good. Flow completely regulated by Lake Francis Case (see station 06452500). Many diversions for irrigation above station.

COOPERATION.--Daily discharge determined from flow through turbines furnished by Corps of Engineers.

AVERAGE DISCHARGE.--35 years, 25,260 ft³/s (715.4 m³/s), 18,301,000 acre-ft/yr (22.6 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 447,000 ft³/s (12,700 m³/s) Apr. 12, 1952; maximum gage height, 20.82 ft (6.346 m) Apr. 12, 1952 (site and datum then in use); minimum daily discharge, 100 ft³/s (2.83 m³/s) Mar. 29, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1943 reached a stage of about 16.5 ft (5.03 m). Maximum stage known, in April 1881, was about 5 ft (1.5 m) higher than that of April 1943, both at site 7.0 mi (11.3 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during year, 33,700 ft³/s (954 m³/s) Sept. 22; minimum daily 900 ft³/s (25.5 m³/s) Feb. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30900	32400	12200	11700	13800	4900	25000	25200	4700	19500	31000	27800
2	30800	30000	10200	13700	12800	5600	25200	24600	5000	25400	30600	27100
3	31800	28200	9600	12000	12000	8300	25600	26700	19800	26800	31700	29500
4	31600	25400	9800	13900	11900	6500	26100	25300	21400	26400	29800	28100
5	32200	21500	9700	15000	13100	5900	25400	25100	24200	24400	26400	27700
6	30600	20400	11100	15100	13300	5600	25500	25300	25200	24800	26700	29500
7	29700	15800	11600	14500	13400	5500	24600	27600	24400	21400	26800	31300
8	29500	13400	11900	14500	15300	8200	24800	28500	23300	26200	26800	31700
9	30300	11800	12500	14500	14300	8300	23900	28600	20000	27000	28200	32300
10	31000	13600	12500	14300	14200	7800	24200	29400	20400	26100	31100	29700
11	31200	15300	12500	13700	13300	9300	23900	28200	20000	27100	28500	30400
12	32400	13300	12600	13500	13500	8000	27100	24800	20200	29800	28700	29700
13	32900	13400	12500	13100	12500	7000	27100	24300	21100	26800	28600	28300
14	28700	13800	12600	13800	13100	9400	25900	24000	24300	28700	28300	26800
15	28500	14700	11800	13400	11800	6800	24000	22900	20500	27900	27800	25400
16	28600	15100	12200	12600	9900	10400	24800	23300	19400	28700	28000	26400
17	30800	13000	11900	12700	8000	13500	24400	24200	22700	26400	26400	28400
18	30200	12500	11800	12500	8300	22000	23900	24000	25300	27600	28200	29200
19	30600	12600	12800	12300	7200	22900	24200	23500	24700	27400	28700	29200
20	31600	12700	13200	12700	4600	21400	26200	23000	24600	28400	29000	30700
21	31400	12900	13000	11700	4800	16100	25800	18900	24900	29300	29900	32700
22	31000	12200	13300	12700	2100	18500	26300	19700	27400	30800	30100	33700
23	30100	12800	12800	13900	1000	21800	27000	22100	27800	30100	31300	29500
24	30200	13300	12800	12600	900	26600	27000	22100	30900	30300	31400	30100
25	29600	13300	12900	13700	1600	31200	28200	19900	30700	30500	30900	32300
26	31200	13000	12700	14100	4800	27500	25700	16300	31300	30600	31500	32300
27	32900	13600	14000	15100	5000	26900	26500	16500	30700	30600	31200	31300
28	31800	13600	13400	13900	5000	26600	27100	16700	27300	30900	30500	32300
29	31000	14000	12600	13400	---	23000	28200	17900	25900	27800	30700	30000
30	31000	13700	12500	13400	---	25000	27800	15500	31900	27700	27400	31500
31	31800	---	12500	14200	---	24800	---	7800	---	29400	29000	---
TOTAL	955900	481300	377500	418200	260900	465300	771400	701900	700000	854800	905200	894900
MEAN	30840	16040	12180	13490	9318	15010	25710	22640	23330	27570	29200	29830
MAX	32900	32400	14000	15100	15300	31200	28200	29400	31900	30900	31700	33700
MIN	28500	11800	9600	11700	900	4900	23900	7800	4700	19500	26400	25400
AC-FT	1896000	954700	748800	829500	517500	922900	1530000	1392000	1388000	1695000	1795000	1775000

CAL YR 1981 TOTAL 8654500 MEAN 23710 MAX 36000 MIN 4900 AC-FT 17170000
WTR YR 1982 TOTAL 7747300 MEAN 21340 MAX 33700 MIN 900 AC-FT 15450000

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1978.
WATER TEMPERATURES: October 1974 to September 1978.
DISSOLVED OXYGEN: October 1974 to September 1978.

INSTRUMENTATION.--Water-quality monitor since June 1973.

REMARKS.--Water is supplied to the monitor from the raw water intake located in the penstocks. This location is 121 ft (37 m) below the normal pool surface. Depth of observation is 1,227 ft (374 m) above mean sea level. Records prior to October 1974 are on file in the District office, Corps of Engineers, Omaha, NE. In addition to the water-quality monitor, samples were collected once a month.

COOPERATION.--Records of specific conductance, water temperature, dissolved oxygen and pH were furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 850 micromhos Mar. 10, 1975; minimum daily mean, 606 micromhos Dec. 7, 1976.
WATER TEMPERATURES: Maximum daily mean, 25.5°C Aug. 9, 12-16, 25, 1975, July 31 to Aug. 2, Aug. 5, 10, 1977, Aug. 25, 1978; minimum daily mean, 0.0°C Jan. 21-26, 1975.
DISSOLVED OXYGEN: Maximum daily mean, 13.2 mg/L Jan. 2, 3, Feb. 5-11, 14-21, 1975; minimum daily mean, 6.7 mg/L Aug. 6, 8, 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV											
19...	1100	18800	880	8.3	6.0	2.8	9.7	K1	K2	279	119
JAN											
18...	1400	18800	510	8.5	1.0	1.5	7.0	K1	70	279	109
MAR											
02...	1200	13600	960	7.9	2.0	--	13.8	K2	K8	--	--
MAY											
11...	1200	33600	850	8.0	9.0	10	11.2	<1	34	263	103
JUL											
13...	1100	32600	830	8.1	22.0	2.5	7.7	K4	51	260	102
AUG											
17...	1300	36900	800	8.4	25.0	1.1	6.8	K3	23	245	89

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV											
19...	67	27	79	38	2.1	4.7	270	160	12	.5	4.4
JAN											
18...	67	27	79	38	2.1	5.2	280	170	14	.6	4.6
MAR											
02...	--	--	--	--	--	--	--	--	--	--	--
MAY											
11...	64	25	75	39	2.1	4.6	270	160	11	.5	4.6
JUL											
13...	66	23	81	40	2.3	5.4	260	158	12	.5	4.5
AUG											
17...	60	23	83	42	2.4	5.4	260	156	13	.5	5.0

< Less than.
K Non-ideal colony count.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
NOV 19...	586	561	.80	29700	.15	.190	.24	1.20	.010	.010	.03
JAN 18...	586	580	.80	29700	<.09	.120	.15	.55	.020	.020	.06
MAR 02...	--	--	--	--	<.10	.140	.18	.43	.020	.010	.03
MAY 11...	549	551	.75	49800	<.10	.430	.55	.70	<.010	<.010	--
JUL 13...	563	548	.77	49600	.12	.160	.21	1.10	.050	.040	.12
AUG 17...	560	544	.76	55800	.30	.140	.18	.70	.100	.050	.15

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
NOV 19...	1100	3	1	2	<1	--	<1	<10	--	<10	<1
JAN 18...	1400	2	0	2	<1	--	<1	10	--	<10	8
JUL 13...	1100	4	1	3	<1	--	<1	10	--	<10	<1
AUG 17...	1300	3	0	3	<1	--	<1	<10	--	<10	<1

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
NOV 19...	--	<3	6	1	5	130	<10	2	0	2	280
JAN 18...	--	<3	3	2	1	70	<10	1	0	1	190
JUL 13...	--	<1	4	1	3	100	5	2	0	2	50
AUG 17...	--	<1	3	1	2	40	<3	<1	--	1	30

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
NOV 19...	120	160	.2	.1	.1	2	0	2	20	20	3
JAN 18...	60	130	.1	.0	.1	1	0	2	10	0	13
JUL 13...	10	39	.3	.2	.1	1	0	2	10	0	10
AUG 17...	20	15	.2	--	<.1	3	1	2	10	0	10

< Less than.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV												
19...	1100	18800	38	1930	89	--	--	--	--	--	--	--
JAN												
18...	1400	18800	38	1930	86	--	--	--	--	--	--	--
MAR												
02...	1200	13600	--	--	--	--	--	--	--	--	--	--
MAY												
11...	1200	33600	21	1910	86	--	--	--	--	--	--	--
JUL												
13...	1100	32600	13	1140	90	--	--	--	--	--	--	--
AUG												
17...	1300	36900	14	1390	94	--	--	--	--	--	--	--

06453010 MISSOURI RIVER AT GREENWOOD, SD

STAGE RECORDS

LOCATION.--Lat 42°55'11", long 98°23'01", in SE¼NW¼NW¼ sec.35, T.94 N., R.64 W., Charles Mix County, Hydrologic Unit 10170101, on left bank 0.25 mi (0.4 km) southeast of Greenwood at mile 865.0 (1,391.8 km).

PERIOD OF RECORD.--1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,200.00 ft (365.760 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Stage regulated by Lake Francis Case 15.0 mi (24.1 km) upstream (see station 06452500). Prior to Oct. 1, 1980, gage heights in files of Corps of Engineers.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.61	28.01	24.43	24.57	26.47	---		---	21.56	25.83	27.70	27.42
2	28.08	28.00	24.33	24.46	26.07	23.66		---	22.32	27.35	27.78	26.91
3	27.66	27.11	23.96	24.76	25.86	23.30		---	23.90	26.57	27.84	27.35
4	27.89	26.98	24.07	24.90	25.83	23.57		---	25.79	26.92	27.72	27.46
5	28.04	26.42	24.07	23.39	25.74	23.38		---	26.36	27.24	27.41	27.30
6	28.21	26.45	24.11	28.28	26.08	23.54		---	26.60	26.13	26.97	27.39
7	27.46	25.57	24.37	28.91	26.50	---		---	26.70	26.70	26.99	27.77
8	27.66	25.54	24.38	28.64	26.16	---		---	26.38	26.03	26.79	27.89
9	27.80	24.22	24.47	28.16	26.46	---		---	25.97	27.55	27.40	27.99
10	27.78	24.78	24.53	28.14	26.44	---		---	25.60	26.83	27.43	27.77
11	27.99	24.99	24.45	27.50	26.30	---		27.55	25.70	26.83	27.76	27.49
12	28.01	24.88	24.58	27.70	25.78	---		26.88	25.63	27.40	27.26	27.39
13	28.27	24.79	24.53	27.53	25.44	---		26.54	25.78	27.60	27.41	27.52
14	27.72	24.57	24.72	27.27	24.93	---		26.47	26.42	27.15	27.20	26.97
15	27.35	24.80	23.82	27.22	24.44	---		26.40	26.25	27.39	27.18	27.17
16	27.54	24.92	23.68	26.82	23.70	---		26.27	25.62	27.14	27.52	---
17	27.50	24.92	23.77	26.86	23.21	---		26.56	25.84	27.51	26.98	---
18	27.79	24.55	23.73	26.65	22.78	---		26.41	26.57	26.87	27.08	27.24
19	27.59	24.47	23.83	26.42	22.67	---		26.49	26.67	27.18	27.31	27.33
20	27.92	24.46	24.02	26.08	22.07	---		26.41	26.60	27.21	27.49	27.50
21	27.95	24.55	23.98	26.10	21.82	---		26.04	26.61	27.55	27.59	27.94
22	27.82	24.49	23.86	25.98	---	---		25.46	26.82	27.55	27.62	28.35
23	27.78	24.43	24.03	25.56	---	---		25.90	27.03	27.77	27.78	27.81
24	27.90	24.58	23.95	26.59	---	---		26.22	27.66	27.66	28.02	27.37
25	27.31	24.66	23.97	26.80	---	---		25.84	27.43	27.69	27.67	27.54
26	28.09	24.56	23.86	26.87	---	---		25.28	27.86	27.79	27.82	27.99
27	28.09	24.61	24.44	26.85	---	---		25.06	27.77	27.69	27.82	28.12
28	28.33	24.69	23.73	26.93	---	---		25.07	27.50	27.77	27.84	27.80
29	27.82	24.68	23.95	26.62	---	---		25.38	27.01	27.37	27.62	27.66
30	27.88	24.77	23.86	26.49	---	---		24.92	27.35	27.06	27.62	27.54
31	27.91	---	23.92	26.43	---	---		24.09	---	27.40	27.29	---
TOTAL	862.75	756.45	747.42	825.48	---	---		---	785.30	842.73	851.91	---
MEAN	27.83	25.22	24.11	26.63	---	---		---	26.18	27.18	27.48	---
MAX	28.33	28.01	24.72	28.91	---	---		---	27.86	27.79	28.02	---
MIN	27.31	24.22	23.68	23.39	---	---		---	21.56	25.83	26.79	---

06464500 KEYA PAHA RIVER AT WEWELA, SD

LOCATION.--Lat 43°01'42", long 99°46'45", in SE¼ sec.24, T.95 N., R.76 W., Tripp County, Hydrologic Unit 10150006, on left bank 13 ft (4 m) downstream from bridge on U.S. Highway 183, 1.0 mi (1.6 km) north of Wewela, 4.5 mi (7.2 km) upstream from Holt Creek, and 11.5 mi (18.5 km) downstream from Lost Creek.

DRAINAGE AREA.--1,070 mi^2 (2,770 km^2), approximately.

PERIOD OF RECORD.--November 1937 to September 1940, October 1947 to current year. Monthly discharge only for October 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,049.78 ft (624.773 m) National Geodetic Vertical Datum of 1929. Prior to June 21, 1957, nonrecording gage at site 13 ft (4 m) upstream at same datum.

REMARKS.--Records good except those for winter period and those for period of no gage-height record, Oct. 16 to Nov. 18, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years (water years 1939-40, 1948-82), 67.0 ft^3/s (1.897 m^3/s), 48,540 acre-ft/yr (59.8 hm^3/s); median of yearly mean discharges, 58 ft^3/s (1.64 m^3/s), 42,000 acre-ft/yr (52 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft^3/s (154 m^3/s) Mar. 31, 1952, gage height, 13.08 ft (3.987 m); maximum gage height, 13.5 ft (4.11 m) Mar. 25, 1950, from floodmark (backwater from ice); no flow Jan. 10 to Feb. 15, 1949, Aug. 19 to Sept. 14, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft^3/s (7.08 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 21	1315	1000	28.3	a*6.82	2.079	May 24	0230	418	11.8	3.24	0.988
May 16	0345	524	14.8	3.56	1.085	June 16	0445	*1700	48.1	6.20	1.890

a Backwater from ice.
Minimum daily discharge, 9.0 ft^3/s (0.26 m^3/s) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	21	22	16	11	197	70	50	192	87	51	50
2	17	22	24	15	11	178	71	50	190	95	47	45
3	18	22	25	15	11	168	74	48	169	109	45	40
4	21	22	25	14	10	141	73	48	148	89	43	40
5	22	23	25	14	10	119	73	47	136	81	44	38
6	23	23	25	13	10	101	74	47	126	83	44	38
7	24	23	26	12	11	83	74	47	114	96	44	37
8	23	22	26	11	11	83	73	45	106	94	42	37
9	22	22	27	9.5	11	91	73	45	103	92	40	38
10	22	23	27	9.0	12	97	85	44	106	98	40	40
11	21	24	25	9.5	13	111	105	45	109	94	39	50
12	21	24	23	10	14	115	110	52	97	87	38	70
13	24	24	23	11	15	99	102	87	85	81	40	75
14	25	24	22	12	25	91	116	303	290	71	37	75
15	25	24	21	12	40	92	91	449	1310	113	35	70
16	25	23	16	11	60	140	75	489	1390	120	33	65
17	24	24	17	12	90	128	70	356	690	85	31	60
18	23	24	20	11	150	113	70	258	421	79	30	56
19	23	24	21	11	250	116	75	194	341	90	30	54
20	23	24	22	11	400	100	70	183	301	83	31	50
21	23	23	22	10	850	89	65	271	259	74	32	50
22	24	24	21	10	800	81	65	357	219	70	35	48
23	24	25	21	10	600	76	60	366	182	66	40	45
24	25	25	20	11	450	73	60	361	156	63	60	45
25	25	24	20	12	350	74	60	308	137	63	56	44
26	24	23	19	13	291	76	55	298	128	62	46	43
27	24	23	18	13	244	96	55	254	119	61	43	43
28	23	22	18	12	223	84	55	214	110	60	39	43
29	21	21	17	12	---	66	50	171	103	56	37	42
30	20	20	17	12	---	73	50	157	95	54	35	42
31	21	---	17	11	---	71	---	169	---	53	35	---
TOTAL	697	692	672	365.0	4973	3222	2199	5813	7932	2509	1242	1473
MEAN	22.5	23.1	21.7	11.8	178	104	73.3	188	264	80.9	40.1	49.1
MAX	25	25	27	16	850	197	116	489	1390	120	60	75
MIN	17	20	16	9.0	10	66	50	44	85	53	30	37
AC-FT	1380	1370	1330	724	9860	6390	4360	11530	15730	4980	2460	2920

CAL YR 1981 TOTAL 11075.3 MEAN 30.3 MAX 600 MIN 8.7 AC-FT 21960
WTR YR 1982 TOTAL 31789.0 MEAN 87.1 MAX 1390 MIN 9.0 AC-FT 63050

06466700 LEWIS AND CLARK LAKE AT SPRINGFIELD, SD

STAGE RECORDS

LOCATION.--Lat 42°51'21", long 97°53'06", in SW¼NE¼SW¼ sec.24, T.93 N., R.60 W., Bon Homme County, Hydrologic Unit 10170101, on left bank at east edge of Springfield at mile 832.20 (1,339.0 km).

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,200.00 ft (365.760 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Stage regulated by Gavins Point Dam 21.2 m (34.1 km) downstream. Prior to Oct. 1, 1980, gage heights in files of Corps of Engineers.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.85	8.93	8.36	---	8.06	5.87	7.11	7.23	7.79	7.81	8.25	8.81
2	8.93	9.00	8.43	---	8.52	5.79	6.98	7.03	7.00	7.38	8.35	8.76
3	8.95	8.97	8.15	---	8.49	5.70	6.96	6.97	6.23	7.49	8.42	8.66
4	8.79	8.75	8.23	---	8.37	5.72	7.16	7.07	6.88	7.44	8.60	8.72
5	8.84	8.42	8.17	---	8.30	5.95	7.22	6.95	6.81	7.50	8.67	8.66
6	8.93	8.27	7.99	---	8.20	5.91	7.16	6.89	7.07	7.42	8.54	8.65
7	9.05	8.21	7.86	---	8.25	5.76	7.26	6.88	7.12	7.22	8.41	8.61
8	8.95	7.99	7.90	---	8.23	5.68	7.12	7.04	7.23	7.06	8.31	8.70
9	8.84	7.86	7.94	---	8.27	5.71	7.01	7.16	7.04	7.18	8.23	8.79
10	8.85	7.60	8.02	---	8.33	5.71	6.91	7.23	6.87	7.41	8.29	8.91
11	8.97	7.69	7.97	---	8.40	5.60	6.93	7.25	6.68	7.23	8.39	8.89
12	8.98	7.84	7.99	---	8.42	5.85	6.85	7.30	6.62	7.27	8.48	8.88
13	8.97	7.85	8.08	---	8.44	5.88	7.13	7.15	6.55	7.48	8.44	8.89
14	9.04	7.88	8.17	---	8.05	6.00	7.20	7.02	6.66	7.45	8.49	8.96
15	8.97	7.81	8.21	---	8.46	6.07	7.10	7.03	7.07	7.49	8.46	8.85
16	8.86	7.94	8.20	---	8.41	5.86	6.89	7.03	6.84	7.49	8.48	8.79
17	8.67	8.10	8.18	---	8.23	5.74	6.93	6.99	6.64	7.51	8.48	8.60
18	8.63	8.06	7.99	---	8.03	5.93	6.89	7.04	6.81	7.50	8.39	8.55
19	8.71	7.97	7.91	8.23	7.88	6.63	6.81	6.98	6.99	7.46	8.32	8.55
20	8.67	8.04	7.87	8.17	7.86	6.68	6.84	7.15	7.01	7.45	8.42	8.55
21	8.68	8.04	7.89	8.10	7.80	6.65	6.87	7.37	7.00	7.49	8.44	8.60
22	8.72	8.04	7.81	8.10	7.84	6.37	6.91	7.28	6.97	7.59	8.51	8.81
23	8.76	7.92	7.76	7.98	7.68	6.25	6.90	7.26	7.11	7.73	8.57	8.83
24	8.80	8.00	7.82	7.88	7.36	6.42	6.98	7.30	7.21	7.84	8.67	8.75
25	8.75	8.02	7.88	7.96	6.91	6.82	7.04	7.39	7.51	7.91	8.75	8.69
26	8.74	7.90	7.92	8.07	6.51	7.35	7.14	7.35	7.56	8.05	8.75	8.75
27	8.83	8.01	8.01	8.15	6.41	7.31	7.03	7.11	7.74	8.18	8.86	8.97
28	8.96	8.06	8.14	8.26	6.09	7.11	6.99	6.96	7.77	8.27	8.97	9.00
29	9.06	8.10	8.33	8.34	---	7.21	7.09	7.06	7.70	8.36	8.94	8.92
30	8.96	8.33	8.36	8.34	---	6.86	7.19	7.66	7.76	8.27	8.96	8.88
31	8.91	---	8.17	8.39	---	7.02	---	8.07	---	8.17	8.90	---
TOTAL	274.62	243.66	249.71	---	222.60	193.37	210.60	222.20	211.83	236.10	264.74	262.98
MEAN	8.86	8.12	8.06	---	7.95	6.24	7.02	7.17	7.06	7.62	8.54	8.77
MAX	9.06	9.00	8.43	---	8.52	7.35	7.26	8.07	7.79	8.36	8.97	9.00
MIN	8.63	7.60	7.76	---	6.09	5.60	6.81	6.88	6.23	7.06	8.23	8.55

06467000 LEWIS AND CLARK LAKE NEAR YANKTON, SD

LOCATION.--Lat 42°50'56", long 97°28'54", in SW¼ sec.7, T.33 N., R.1 W., Cedar County, NE, Hydrologic Unit 10170101, in powerhouse of Gavins Point Dam on Missouri River, 3.75 mi (6.0 km) southwest of Yankton, 13.6 mi (21.9 km) upstream from James River, 32.5 mi (52.3 km) downstream from Niobrara River, and at mile 811.0 (1,304.9 km).

DRAINAGE AREA.--279,500 mi² (723,900 km²), approximately.

PERIOD OF RECORD.--July 1955 to current year (monthend contents only). Prior to October 1955, published as Gavins Point Reservoir near Yankton.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Dec. 9, 1955, recorder at temporary location on wall of intake structure unit 3.

REMARKS.--Reservoir is formed by earthfill dam; storage began in July 1955. Maximum capacity, 504,000 acre-ft (621 hm³) below elevation 1,210.0 ft (368.81 m), top of spillway gates. Normal maximum, 443,000 acre-ft (546 hm³) below elevation 1,208.0 ft (368.20 m). Inactive storage, 157,000 acre-ft (194 hm³) below elevation 1,195.0 ft (364.24 m). Dead storage, 23,000 acre-ft (28.4 hm³) below elevation 1,180.0 ft (359.66 m) crest of spillway. Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.
The spillway consists of 14 taintor gates, each 40 ft (12.2 m) wide by 30 ft (9.1 m) high; spillway capacity, 280,000 ft³/s (7,930 m³/s) at pool elevation 1,210.0 ft (368.81 m). Crest of spillway is at elevation 1,180.0 ft (359.66 m). Normal releases are through 3 power units, installation completed in January 1957; maximum release through power units is 35,000 ft³/s (991 m³/s) at pool elevation, 1,210.0 ft (368.81 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 565,000 acre-ft (697 hm³) Apr. 1, 1960, affected by wind; minimum since initial filling, 61,950 acre-ft (76.4 hm³) Apr. 23, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 453,000 acre-ft (559 hm³) Oct. 14; minimum, 340,000 acre-ft (419 hm³) Mar. 24.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents	Change in contents
Sept. 30	1208.22	447000	
Oct. 31	1208.19	448000	+1000
Nov. 30	1208.18	440000	-8000
Dec. 31	1207.75	435000	-5000
CAL YR 1981			-40000
Jan. 31	1207.87	439000	+4000
Feb. 28	1205.57	375000	-64000
Mar. 31	1205.46	372000	-3000
Apr. 30	1205.41	370000	-2000
May 31	1207.90	440000	+70000
June 30	1206.35	394000	-46000
July 31	1207.34	423000	+29000
Aug. 31	1208.17	446000	+23000
Sept. 30	1208.10	447000	+1000
WTR YR 1982			0

NOTE.--Reservoir frozen over Dec. 18 to Mar. 30.

06467000 LEWIS AND CLARK LAKE NEAR YANKTON, SD--Continued

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          INITIAL DATE                          81/10/07  81/10/07  81/10/07  81/10/07  81/10/07  81/10/07  81/10/07  81/10/07
          INITIAL TIME-DEPTH-BOTTOM             1420 0000 1420 0001 1420 0003 1420 0009 1420 0016 1420 0022 1420 0029 1420 0036
 00010   WATER      TEMP      CENT              15.0      15.0      15.0      15.0      15.0      15.0      14.9      14.9
 00011   WATER      TEMP      FAHN              59.0      59.0      59.0      59.0      59.0      59.0      58.8      58.8
 00020    AIR       TEMP      CENT              17.5
 00025 BAROMTRC  PRESSURE   MM OF HG             741
 00032   CLOUD     COVER     PERCENT              50
 00035    WIND    VELOCITY     MPH              27.0
 00036    WIND    DIR,FROM  NORTH=0              135
 00077   TRANSP    SECCHI    INCHES               30
 00094 CNDUCTVY   FIELD     MICROMHO             815       815       815       815       815       815       815       815
 00299     DO      PROBE      MG/L               8.2       8.2       8.2       8.1       8.1       8.1       8.1       8.1
 00301     DO      SATUR     PERCENT            80.4      80.4      80.4      79.4      79.4      79.4      79.4      79.4
 00400     PH                    SU             8.30      8.30      8.30      8.30      8.30      8.30      8.30      8.30
          INITIAL DATE                          81/10/07  81/10/07  81/10/07
          INITIAL TIME-DEPTH-BOTTOM             1420 0042 1420 0047 1420 0065
          FINAL DATE                                                81/10/07
          FINAL TIME-NUMBER OF SAMPLES                              1445 G
          CP-SPACE OR TIME-STATISTICAL FUNC                         CP=S
 00010   WATER      TEMP      CENT              14.9      14.8
 00011   WATER      TEMP      FAHN              58.8      58.6
 00076   TURB     TRBIDMTR  HACH FTU                                11.0
 00094 CNDUCTVY   FIELD     MICROMHO             815       815
 00299     DO      PROBE      MG/L               8.1       8.0
 00301     DO      SATUR     PERCENT            79.4      78.4
 00400     PH                    SU             8.30      8.30
 00410   T ALK     CACO3      MG/L                                   330
 00515 RESIDUE   DISS-105   C MG/L                                   538
 00530 RESIDUE   TOT NFLT     MG/L                                     5
 00610 NH3+NH4-   N TOTAL     MG/L                                 0.010
 00619 UN-IONZD   NH3-NH3     MG/L                                 0.000
 00620   NO3-N     TOTAL      MG/L                                 0.010
 00665 PHOS-TOT              MG/L P                                0.030
 00900 TOT HARD    CACO3      MG/L                                   258
 00916 CALCIUM    CA-TOT      MG/L                                  60.0
 00927 MGNSIUM    MG,TOT      MG/L                                  26.0
 00940 CHLORIDE    TOTAL      MG/L                                    11
 00945 SULFATE   SO4-TOT      MG/L                                   244
 32216 CHLRPHYL    TOTAL      UG/L                                 27.00
 70507  PHOS-T     ORTHO     MG/L P                                0.000
 71900 MERCURY   HG,TOTAL     UG/L                                   0.8
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Analyses by Corps of Engineers.
Tables from STORET.

06467500 MISSOURI RIVER AT YANKTON, SD

LOCATION.--Lat 42°51'58", long 97°23'37", in SW¼SW¼ sec.18, T.93 N., R.55 W., Yankton County, Hydrologic Unit 10170101, near left bank in downstream end of left pier of Meridian Highway Bridge on U.S. Highway 81, 5.2 mi (8.4 km) downstream from Gavins Point Dam, 6.0 mi (9.7 km) upstream from James River, and at mile 805.8 (1,296.5 km).

DRAINAGE AREA.--279,500 mi^2 (723,900 km^2), approximately.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at same site March 1873 to November 1886, March 1905 to May 1908 (fragmentary), August 1921 to date (except winter months prior to 1932), are contained in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 1,139.68 ft (347.374 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1932, nonrecording gage, and Sept. 20, 1932, to Mar. 9, 1967, water-stage recorder at present site and at datum 20.0 ft (6.096 m) higher.

REMARKS.--Records good. Flow completely regulated by Lewis and Clark Lake 5.2 mi (8.4 km) upstream since July 1955 (see station 06467000). Many diversions for irrigation and water supply above station. Corps of Engineers gage-height telemeter at station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--52 years, 26,380 ft^3/s (747.1 m^3/s), 19,110,000 acre-ft/yr (23.6 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480,000 ft^3/s (13,600 m^3/s) Apr. 13, 1952; maximum gage height, 35.5 ft (10.82 m) Apr. 13, 14, 1952 (present datum); minimum daily discharge, 2,700 ft^3/s (76.5 m^3/s) Nov. 15, 16, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 50.5 ft (15.39 m) Apr. 5, 1881 (ice jam), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33,800 ft^3/s (957 m^3/s) at 1900 hours, Sept. 28, gage height, 17.67 ft (5.386 m); maximum gage height, 19.48 ft (5.938 m) Jan. 23 (backwater from ice); minimum daily discharge, 9,900 ft^3/s (280 m^3/s) Mar. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31900	32200	14500	13600	15000	12000	28100	28400	22000	30500	31600	31200
2	32000	31800	14500	13400	15000	11000	27800	28400	23500	30000	32000	31100
3	32000	31100	13900	13500	15300	10000	27700	28600	23400	30500	31800	31000
4	31900	30300	13700	13500	15500	10000	28100	28800	25300	30500	31800	31100
5	31900	27800	13700	13100	16000	10000	28000	28800	26300	30500	32200	30900
6	31700	25200	13600	14000	16000	10000	28200	28700	26900	30500	31100	31100
7	31500	22700	13700	14000	16000	10000	28500	28800	26900	30000	30500	31100
8	31600	19900	13600	14000	15400	10000	28300	29000	27100	29500	30500	31100
9	31500	17300	13600	14000	15000	10000	27700	29400	26800	29500	30800	31000
10	31400	15400	13700	14000	15000	10000	27700	29300	27000	30000	31400	31200
11	31900	15100	13500	14000	15000	9900	27800	29200	26400	30000	31100	31300
12	31900	15000	13600	14000	15000	10000	27800	28900	25300	29500	30600	31500
13	31700	15000	13600	14000	15000	10000	27900	28200	25700	30300	30500	31000
14	31700	15000	13600	14000	15000	11000	28000	27900	26500	30300	30400	30500
15	31700	14900	13600	14500	15000	13900	28000	28300	26500	30600	30400	30500
16	31800	14900	13600	14700	15000	15900	28000	28400	25500	30600	30500	30500
17	31600	14900	13600	14700	14500	18500	28000	28100	25600	30500	30600	30500
18	31400	14800	13600	15000	14000	21300	28100	27800	27800	30500	30800	31000
19	31600	14600	13600	15000	13000	23600	27900	28000	28900	30600	30700	31000
20	31500	14600	13800	15000	13000	23800	28000	27500	29400	30700	30900	31500
21	31000	14600	13500	15000	13000	23900	28000	24800	29600	30700	31100	32500
22	31000	14700	13400	15000	13000	25000	27900	24400	29900	30600	31700	32500
23	31100	14600	13400	15000	13000	25600	28000	26500	30900	30200	32000	32700
24	31000	14700	13400	15000	13000	25700	28000	27100	31000	30200	32200	32800
25	31000	14600	13400	15000	12500	25900	28000	27500	30900	30200	32200	32900
26	31000	14400	13400	15000	12000	26800	27900	26800	30800	30200	32300	33000
27	31400	14500	13400	15000	12000	27200	28100	25900	30900	30700	32300	33200
28	31600	14600	13400	15000	12000	27100	28400	24700	31000	31200	32200	33400
29	32200	14600	13800	15000	---	27800	28300	24100	30500	31200	32100	33400
30	32100	14700	13600	15000	---	27900	28300	21600	30500	31500	32100	33500
31	32200	---	13500	15000	---	28000	---	20300	---	31700	31800	---
TOTAL	979800	548500	422800	447000	399200	551800	840500	844200	828800	943500	972200	950000
MEAN	31610	18280	13640	14420	14260	17800	28020	27230	27630	30440	31360	31670
MAX	32200	32200	14500	15000	16000	28000	28500	29400	31000	31700	32300	33500
MIN	31000	14400	13400	13100	12000	9900	27700	20300	22000	29500	30400	30500
AC-FT	1943000	1088000	838600	886600	791800	1094000	1667000	1674000	1644000	1871000	1928000	1884000

CAL YR 1981 TOTAL 9407900 MEAN 25780 MAX 36300 MIN 11000 AC-FT 18660000
WTR YR 1982 TOTAL 8728300 MEAN 23910 MAX 33500 MIN 9900 AC-FT 17310000

06471000 JAMES RIVER AT COLUMBIA, SD

LOCATION.--Lat 45°36'13", long 98°18'36", in NW¼NW¼ sec.33, T.125 N., R.62 W., Brown County, Hydrologic Unit 10160003, on left bank 20 ft (6 m) downstream from highway bridge, 0.6 mi (1.0 km) south of Columbia, 0.9 mi (1.4 km) downstream from Chicago and North Western Transportation Company bridge, 0.3 mi (0.5 km) upstream from Elm River, and 12.7 mi (20.4 km) downstream from Columbia Road Dam.

DRAINAGE AREA.--7,050 mi² (18,300 km²), approximately, of which about 3,000 mi² (7,770 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,270 ft (387 m), from topographic map. From Oct. 1, 1945, to Oct. 4, 1957, nonrecording gage. From Oct. 5, 1957, to Sept. 30, 1980, water-stage recorder. Both gages described above at site 3.3 mi (5.31 km) upstream from present site and at different datum.

REMARKS.--Records fair, except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 168 mi (270 km) upstream since May 1953.

AVERAGE DISCHARGE.--37 years, 107 ft³/s (3.030 m³/s), 77,520 acre-ft/yr (95.6 hm³/yr); median of yearly mean discharges, 64 ft³/s (1.81 m³/s), 46,400 acre-ft/yr (57 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,420 ft³/s (153 m³/s) May 24, 25, 1950, gage height, 16.89 ft (5.148 m), from graph based on gage readings; maximum gage height, 17.09 ft (5.209 m) Apr. 22, 1969; maximum daily reverse flow, 1,860 ft³/s (52.7 m³/s) Apr. 8, 1952, backwater from Elm River.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 960 ft³/s (27.2 m³/s) at 1630 hours, Apr. 18 (backwater from Elm River); maximum gage height, 17.08 ft (5.206 m) Apr. 7 (backwater from Elm River); maximum daily reverse flow, 800 ft³/s (22.7 m³/s) Apr. 5 (backwater from Elm River).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	8.0	40	40	6.4	5.1	-200	834	314	82	110	122
2	.00	7.8	40	40	6.2	4.9	-450	812	274	80	112	122
3	.00	7.4	40	40	5.9	4.7	-670	782	253	80	112	122
4	.00	7.4	40	37	5.6	4.6	-720	774	244	77	116	121
5	.00	7.2	40	24	5.4	4.6	-800	769	237	71	120	123
6	.00	7.2	40	9.5	5.2	4.6	-360	760	232	63	122	123
7	.00	6.4	40	7.8	4.9	4.6	-150	743	226	59	121	124
8	.00	5.8	40	7.5	4.6	4.6	50	730	216	53	118	122
9	.00	5.0	40	7.2	4.5	4.6	100	722	210	47	117	120
10	.00	5.1	40	6.8	4.4	4.7	150	713	209	44	115	117
11	.00	5.1	40	6.6	4.3	4.7	250	701	207	41	114	114
12	.00	5.0	40	6.7	4.3	4.9	400	685	206	39	112	113
13	.00	4.9	40	6.9	4.2	5.0	520	675	201	38	113	113
14	.00	5.0	40	7.0	4.2	5.4	640	663	195	37	114	109
15	.00	4.8	40	7.2	4.2	6.2	780	652	189	38	114	109
16	.00	4.2	40	7.2	4.2	28	880	639	184	39	114	107
17	.00	4.1	40	7.2	4.2	110	920	625	179	39	114	105
18	.00	4.6	40	7.2	4.2	170	940	598	172	39	114	102
19	.00	4.7	40	7.2	4.3	160	920	580	166	40	113	102
20	.00	3.8	40	7.2	4.3	145	910	558	160	42	112	98
21	.00	3.7	40	7.0	4.3	140	890	542	155	49	112	96
22	.00	4.0	40	6.9	4.4	135	880	530	147	51	111	96
23	.00	4.4	40	6.9	4.6	130	870	512	141	56	112	94
24	.00	5.4	40	7.1	4.8	110	860	492	131	62	115	93
25	.00	8.2	40	7.2	5.0	110	860	472	124	69	116	91
26	.00	11	40	7.2	5.1	110	860	458	115	78	117	90
27	.00	20	40	7.2	5.2	125	855	442	108	86	118	86
28	.00	24	40	7.0	5.2	160	850	421	101	92	119	84
29	2.7	34	40	6.9	---	170	845	404	92	94	120	80
30	7.4	38	40	6.7	---	200	842	386	86	97	121	78
31	7.2	---	40	6.6	---	10	---	354	---	105	121	---
TOTAL	17.30	266.2	1240	366.9	134.1	2086.2	12722	19028	5474	1887	3579	3176
MEAN	.56	8.87	40.0	11.8	4.79	67.3	424	614	182	60.9	115	106
MAX	7.4	38	40	40	6.4	200	940	834	314	105	122	124
MIN	.00	3.7	40	6.6	4.2	4.6	-800	354	86	37	110	78
AC-FT	34	528	2460	728	266	4140	25230	37740	10860	3740	7100	6300

CAL YR 1981 TOTAL 3697.99 MEAN 10.1 MAX 96 MIN .00 AC-FT 7330
WTR YR 1982 TOTAL 49976.70 MEAN 137 MAX 940 MIN -800 AC-FT 99130

06471000 JAMES RIVER AT COLUMBIA, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-64, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to September 1981.
WATER TEMPERATURES: October 1966 to September 1981.

REMARKS.--No flow Oct. 1-28.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,500 micromhos Mar. 1, 1974, Jan. 27-29, Jan. 31, 1979; minimum daily, 240 micromhos Mar. 17, 1972.
WATER TEMPERATURES: Maximum daily, 32.0°C June 29, July 10, 1970; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
NOV 13...	1030	4.7	1300	8.5	5.5	5.5	11.2	K30	K53	370	0
JAN 07...	1600	7.8	1440	7.4	.5	4.7	6.1	K2	150	485	0
MAR 16...	1600	26	490	7.7	.0	--	7.3	78	1100	--	--
MAY 13...	1000	673	2110	6.6	12.0	1.9	--	K7	K14	182	2
JUN 30...	1400	85	770	8.0	21.0	5.2	7.4	--	--	252	0
AUG 25...	1600	116	760	7.5	21.5	.80	6.4	84	420	249	0

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
NOV 13...	74	45	120	40	2.8	19	180	380	61	.3	8.4
JAN 07...	97	59	160	40	3.2	22	180	490	84	.4	34
MAR 16...	--	--	--	--	--	--	--	--	--	--	--
MAY 13...	40	20	47	34	1.6	12	74	180	21	.2	5.8
JUN 30...	53	29	63	34	1.8	14	92	281	22	.2	11
AUG 25...	47	32	78	39	2.2	14	100	283	25	.2	22

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)
NOV 13...	787	736	1.1	10.1	.32	.070	.09	2.10	.080	.160	.49
JAN 07...	1030	932	1.4	21.7	.38	1.10	1.4	3.70	.460	.460	1.4
MAR 16...	--	--	--	--	.48	.830	1.1	3.60	.710	.740	2.3
MAY 13...	346	328	.47	629	<.10	.060	.08	1.50	.210	.250	.77
JUN 30...	485	453	.66	111	.10	.180	.23	3.00	.580	.640	2.0
AUG 25...	554	488	.75	174	<.10	.400	.52	1.40	.470	.550	1.7

< Less than.
K Non-ideal colony count.

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
NOV 13...	1030	4	1	3	<1	--	<1	10	--	<10	1
JAN 07...	1600	6	0	7	<1	--	<1	10	--	<10	<1
JUN 30...	1400	5	1	4	<1	--	<1	<10	--	<10	1
AUG 25...	1600	5	0	5	<1	--	<1	<10	--	<10	<1

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
NOV 13...	--	<3	18	16	2	250	<10	8	7	1	90
JAN 07...	--	<3	4	2	2	240	18	<1	--	<1	470
JUN 30...	--	<1	11	8	3	670	<3	4	0	4	110
AUG 25...	--	<1	5	3	2	110	24	<1	--	<1	70

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
NOV 13...	70	17	.1	--	<.1	<1	--	<1	30	30	4
JAN 07...	10	460	.1	--	<.1	<1	--	<1	20	10	9
JUN 30...	60	48	.2	.1	.1	<1	--	<1	20	7	13
AUG 25...	30	40	.1	--	<.1	<1	--	<1	10	0	15

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 13...	1030	4.7	84	1.1	61	--	--	--	73	--	100	--
JAN 07...	1600	7.8	74	1.6	73	--	--	--	73	95	100	--
MAR 16...	1600	26	26	1.8	91	--	--	--	--	--	--	--
MAY 13...	1000	673	8	15	66	--	--	--	--	--	--	--
JUN 30...	1400	85	53	12	66	--	--	--	--	--	--	--
AUG 25...	1600	116	13	4.1	30	--	--	--	--	--	--	--

< Less than.

06471200 MAPLE RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'20", long 98°27'08", in SW¼SE¼ sec.33, T.129 N., R.62 W., Dickey County, ND, Hydrologic Unit 10160004, on left bank 0.4 mi (0.6 km) upstream from State line, 7.8 mi (12.6 km) northeast of Frederick, SD, and 15.7 mi (25.3 km) upstream from mouth.

DRAINAGE AREA.--750 mi² (1,940 km²), approximately, of which about 270 mi² (699 km²) is probably noncontributing.

PERIOD OF RECORD.--June 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,365 ft (416 m), from topographic map. Prior to June 14, 1962, nonrecording gage at site 0.4 mi (0.6 km) downstream at datum 0.94 ft (0.287 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 20.1 ft³/s (0.569 m³/s), 14,560 acre-ft/yr (18.0 hm³/yr); median of yearly mean discharges, 10 ft³/s (0.28 m³/s), 7,240 acre-ft/yr (8.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft³/s (168 m³/s) Apr. 11, 1969; maximum gage height, 16.05 ft (4.892 m) Apr. 11, 1969 (backwater from ice); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 50 ft³/s (1.416 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 14	--	a180	5.10	--	--	Apr. 15	1100	379	10.7	6.59	2.009
Apr. 2	1730	*2280	64.6	*11.06	3.371	May 20	2000	81	2.29	4.72	1.439

a Ice jam.
No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	812	24	18	1.3	24	.00
2	.00	.00	.00	.00	.00	.00	1780	22	17	2.1	20	.00
3	.00	.00	.00	.00	.00	.00	1400	20	15	2.2	18	.00
4	.00	.00	.00	.00	.00	.00	900	20	13	1.4	15	.00
5	.00	.00	.00	.00	.00	.00	600	18	12	.90	13	.00
6	.00	.00	.00	.00	.00	.00	430	17	13	.53	11	.00
7	.00	.00	.00	.00	.00	.00	400	15	12	.22	11	.00
8	.00	.00	.00	.00	.00	.00	380	14	11	.09	8.8	.00
9	.00	.00	.00	.00	.00	.00	360	13	12	.06	7.8	.00
10	.00	.00	.00	.00	.00	.00	343	13	10	.04	6.7	.00
11	.00	.00	.00	.00	.00	2.5	273	13	9.2	.01	5.1	.00
12	.00	.00	.00	.00	.00	9.0	275	13	8.5	.00	3.9	.00
13	.00	.00	.00	.00	.00	50	264	13	7.8	.00	3.3	.00
14	.00	.00	.00	.00	.00	180	327	14	7.5	.00	2.7	.00
15	.00	.00	.00	.00	.00	170	375	15	7.2	.00	2.4	.00
16	.00	.00	.00	.00	.00	150	357	16	7.5	.00	2.2	.00
17	.00	.00	.00	.00	.00	140	298	20	7.2	4.5	1.6	.00
18	.00	.00	.00	.00	.00	130	225	24	6.7	31	1.2	.00
19	.00	.00	.00	.00	.00	120	177	34	6.4	32	1.1	.00
20	.00	.00	.00	.00	.00	110	139	69	5.4	27	.90	.00
21	.00	.00	.00	.00	.00	105	113	77	5.3	26	.47	.00
22	.00	.00	.00	.00	.00	100	90	65	4.8	24	.42	.00
23	.00	.00	.00	.00	.00	100	70	53	4.4	22	.29	.00
24	.00	.00	.00	.00	.00	105	59	48	3.5	19	.22	.00
25	.00	.00	.00	.00	.00	110	51	43	1.3	17	.11	.00
26	.00	.00	.00	.00	.00	100	41	37	1.5	15	.07	.00
27	.00	.00	.00	.00	.00	94	34	31	2.1	13	.03	.00
28	.00	.00	.00	.00	.00	92	30	27	1.5	13	.00	.00
29	.00	.00	.00	.00	---	94	26	25	.47	27	.00	.00
30	.00	.00	.00	.00	---	110	26	23	.60	33	.00	.00
31	.00	---	.00	.00	---	350	---	20	---	30	.00	---
TOTAL	.00	.00	.00	.00	.00	2421.50	10655	856	232.37	342.35	161.31	.00
MEAN	.000	.000	.000	.000	.000	78.1	355	27.6	7.75	11.0	5.20	.000
MAX	.00	.00	.00	.00	.00	350	1780	77	18	33	24	.00
MIN	.00	.00	.00	.00	.00	.00	26	13	.47	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	4800	21130	1700	461	679	320	.00

CAL YR 1981 TOTAL 603.01 MEAN 1.65 MAX 148 MIN .00 AC-FT 1200
WTR YR 1982 TOTAL 14668.53 MEAN 40.2 MAX 1780 MIN .00 AC-FT 29100

06471500 ELM RIVER AT WESTPORT, SD

LOCATION.--Lat 45°39'22", long 98°29'48", in SW¼NW¼ sec.12, T.125 N., R.64 W., Brown County, Hydrologic Unit 10160004, on right bank 12 ft (3.7 m) downstream from highway bridge, 0.5 mi (0.8 km) north of Westport, 0.7 mi (1.1 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 9.3 mi (15.0 km) downstream from Willow Creek, and 30.4 mi (48.9 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi² (4,350 km²), approximately, of which about 510 mi² (1,320 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,309.3 ft (399.07 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1951, and Apr. 8 to Sept. 9, 1952, nonrecording gage 12 ft (3.7 m) upstream at same datum. Aug. 6, 1951, to Apr. 7, 1952, water-stage recorder at present site and datum.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated for Aberdeen municipal water supply by Elm Lake and other small reservoirs upstream, combined capacity, about 16,000 acre-ft (19.7 hm³). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 46.9 ft³/s (1.328 m³/s), 33,980 acre-ft/yr (41.9 hm³/yr); median of yearly mean discharges, 23 ft³/s (0.65 m³/s), 16,700 acre-ft/yr (21 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft³/s (357 m³/s) Apr. 10, 1969, gage height, 22.11 ft (6.739 m); no flow for many days in most years prior to 1960.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 16	--	140	3.96	ice jam	1.826	Apr. 3	--	*4300	122	a*16.24	4.950
Mar. 25	--	240	6.80	ice jam	2.036	Apr. 16	0430	769	21.8	7.86	2.396

a Backwater from ice.
Minimum daily discharge, 0.41 ft³/s (0.012 m³/s) July 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	9.0	7.4	2.7	2.5	3.4	1400	73	34	4.2	21	4.4
2	2.9	8.2	6.6	3.2	2.4	3.3	3000	66	31	4.0	29	3.6
3	3.5	7.0	6.8	2.6	2.0	3.2	3600	62	28	4.2	29	2.1
4	4.3	6.2	5.1	2.6	1.7	3.0	2800	55	26	3.7	26	1.8
5	3.4	5.9	5.7	2.8	1.4	2.8	1900	48	24	3.4	22	2.5
6	3.0	5.4	5.6	2.3	1.3	2.9	1600	37	27	3.2	19	1.8
7	2.7	5.0	5.8	2.0	1.4	2.9	1200	38	25	3.0	16	1.8
8	2.7	5.4	5.2	2.1	1.5	3.0	900	38	25	2.9	13	1.9
9	2.8	5.2	5.0	2.0	1.4	3.0	698	36	24	3.0	10	1.9
10	2.3	3.8	4.6	1.4	1.4	4.0	595	37	22	3.1	10	1.7
11	2.3	3.4	4.6	1.1	1.5	5.1	553	32	21	2.9	9.0	2.3
12	2.6	3.6	4.6	1.4	1.7	5.9	589	30	19	2.8	8.0	2.8
13	2.9	3.6	4.6	3.1	2.1	8.3	579	30	18	2.9	7.8	2.7
14	3.4	3.5	4.6	3.1	2.4	18	574	33	18	2.9	7.7	2.7
15	4.1	3.9	4.6	3.1	3.0	50	697	38	16	2.9	7.6	2.8
16	4.7	4.1	4.3	3.0	4.9	126	755	37	15	1.6	7.9	2.8
17	14	4.0	3.8	3.0	9.0	105	701	36	14	1.1	7.8	3.0
18	17	4.7	3.2	2.6	6.3	120	583	37	12	.57	7.8	3.0
19	18	6.3	3.2	2.4	4.5	80	466	39	11	.41	7.5	3.2
20	19	7.3	3.3	2.2	4.6	100	373	43	10	.59	7.3	3.4
21	19	4.8	3.5	2.2	5.8	70	310	59	9.5	1.4	7.3	3.6
22	18	4.9	3.5	2.3	5.2	50	260	89	8.3	6.3	6.9	3.8
23	8.2	5.8	3.1	2.7	3.8	40	214	85	7.6	19	6.8	4.0
24	8.6	5.5	3.0	2.4	3.4	37	178	76	7.6	29	6.8	3.8
25	12	5.9	3.1	2.4	3.3	170	150	68	5.9	26	6.2	3.8
26	12	6.9	2.9	2.7	3.3	210	130	62	6.0	23	4.9	4.3
27	10	6.6	3.0	3.1	3.2	180	118	56	6.1	21	4.5	4.6
28	10	6.5	2.8	3.2	3.5	160	102	51	6.0	20	4.6	4.9
29	9.5	6.5	2.7	3.3	---	145	88	44	5.3	15	4.8	4.3
30	10	6.6	2.8	3.3	---	460	80	42	4.3	12	4.4	4.1
31	9.5	---	2.9	2.7	---	700	---	38	---	11	4.6	---
TOTAL	245.5	165.5	131.9	79.0	88.5	2871.8	25193	1515	486.6	237.07	335.2	93.4
MEAN	7.92	5.52	4.25	2.55	3.16	92.6	840	48.9	16.2	7.65	10.8	3.11
MAX	19	9.0	7.4	3.3	9.0	700	3600	89	34	29	29	4.9
MIN	2.3	3.4	2.7	1.1	1.3	2.8	80	30	4.3	.41	4.4	1.7
AC-FT	487	328	262	157	176	5700	49970	3010	965	470	665	185

CAL YR 1981 TOTAL 2345.02 MEAN 6.40 MAX 113 MIN .00 AC-FT 4650
WTR YR 1982 TOTAL 31442.47 MEAN 86.1 MAX 3600 MIN .41 AC-FT 62370

06473000 JAMES RIVER AT ASHTON, SD

LOCATION.--Lat 44°59'54", long 98°28'50", in NW¼NW¼NE¼ sec.36, T.118 N., R.64 W., Spink County, Hydrologic Unit 10160006, on right bank at downstream side of highway bridge, 0.9 mi (1.4 km) east of Ashton, 6.1 mi (9.8 km) upstream from Snake Creek, and 14.2 mi (22.8 km) upstream from Turtle Creek.

DRAINAGE AREA.--11,000 mi^2 (28,500 km^2), approximately, of which about 4,190 mi^2 (10,900 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year.

REVISED RECORDS.--WSP 1209: 1947.

GAGE.--Water-stage recorder. Datum of gage is 1,244.4 ft (379.29 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 26, 1957, nonrecording gage at present site and Nov. 26, 1957, to Oct. 7, 1974, water-stage recorder at site 900 ft (274 m) upstream all at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 285 mi (459 km) upstream since May 1953. Occasional backwater and reverse flow caused by Snake Creek during most years. Several observations of specific conductance were made during the year.

AVERAGE DISCHARGE.--37 years, 157 ft^3/s (4.446 m^3/s), 113,700 acre-ft/yr (140 hm^3/yr); median of yearly mean discharges, 110 ft^3/s (3.12 m^3/s), 79,700 acre-ft/yr (98 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,680 ft^3/s (161 m^3/s) Apr. 24, 1969, gage height, 20.63 ft (6.288 m); maximum gage height, 21.17 ft (6.453 m) Apr. 13, 1969 (backwater from Snake Creek); maximum daily reverse flow, 2,100 ft^3/s (59.5 m^3/s) Apr. 9, 1969 (backwater from Snake Creek).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,000 ft^3/s (28.3 m^3/s) at 1245 hours, May 5, gage height, 11.03 ft (3.362 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	10	100	971	746	248	46	84
2	.00	.00	.00	.00	.00	10	155	982	729	240	47	82
3	.00	.00	.00	.00	.00	10	350	993	713	231	49	81
4	.00	.00	.00	.00	.00	10	430	1000	695	214	52	81
5	.00	.00	.00	.00	.00	9.8	420	1000	673	198	55	80
6	.00	.00	.00	.00	.00	9.4	380	1000	676	184	58	80
7	.00	.00	.00	.00	.00	9.1	365	997	653	172	60	79
8	.00	.00	.00	.00	.00	8.9	410	993	629	159	61	78
9	.00	.00	.00	.00	.00	8.6	440	991	608	148	63	78
10	.00	.00	.00	.00	.00	8.6	450	990	588	139	66	77
11	.00	.00	.00	.00	.00	8.6	440	976	570	130	68	76
12	.00	.00	.00	.00	.00	8.6	435	968	552	122	70	78
13	.00	.00	.00	.00	.00	8.7	450	958	530	115	72	80
14	.00	.00	.00	.00	.00	8.8	460	972	506	109	74	80
15	.00	.00	.00	.00	.00	8.9	510	983	496	103	74	81
16	.00	.00	.00	.00	1.0	9.2	550	974	481	96	75	82
17	.00	.00	.00	.00	3.0	9.4	600	958	460	89	75	83
18	.00	.00	.00	.00	5.0	9.7	680	942	440	82	75	82
19	.00	.00	.00	.00	6.0	10	750	922	422	75	75	83
20	.00	.00	.00	.00	10	11	804	908	400	70	75	82
21	.00	.00	.00	.00	15	11	822	895	387	71	75	81
22	.00	.00	.00	.00	25	12	843	881	372	67	76	79
23	.00	.00	.00	.00	29	11	863	865	355	62	75	78
24	.00	.00	.00	.00	26	11	882	845	340	56	76	79
25	.00	.00	.00	.00	21	10	897	847	324	53	76	77
26	.00	.00	.00	.00	18	10	911	836	310	52	77	74
27	.00	.00	.00	.00	15	11	921	818	290	51	77	71
28	.00	.00	.00	.00	12	18	934	800	281	48	77	70
29	.00	.00	.00	.00	---	27	944	785	268	47	79	67
30	.00	.00	.00	.00	---	45	958	774	259	46	80	65
31	.00	---	.00	.00	---	60	---	761	---	45	82	---
TOTAL	.00	.00	.00	.00	186.00	413.3	18154	28585	14753	3522	2140	2348
MEAN	.000	.000	.000	.000	6.64	13.3	605	922	492	114	69.0	78.3
MAX	.00	.00	.00	.00	29	60	958	1000	746	248	82	84
MIN	.00	.00	.00	.00	.00	8.6	100	761	259	45	46	65
AC-FT	.00	.00	.00	.00	369	820	36010	56700	29260	6990	4240	4660

CAL YR 1981 TOTAL 1857.17 MEAN 5.09 MAX 66 MIN .00 AC-FT 3680
WTR YR 1982 TOTAL 70101.30 MEAN 192 MAX 1000 MIN .00 AC-FT 139000

06473000 JAMES RIVER AT ASHTON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1977 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1977 to current year.

REMARKS.--No flow Oct. 1 to Feb. 15. Temperatures collected once daily by observer.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum daily, 29.0°C July 24, 1982; minimum daily, 0.0°C on several days during November to December 1978.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum observed daily, 29.0°C July 24; minimum observed daily, 1.0°C Apr. 7-10.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	14.0	19.0	22.0	---	23.0
2							3.0	---	19.0	23.0	27.0	22.0
3							---	17.0	19.0	25.0	27.0	22.0
4							---	18.0	19.0	---	27.0	---
5							6.0	17.0	19.0	---	28.0	---
6							---	17.0	---	25.0	28.0	---
7							1.0	15.0	19.0	24.0	28.0	21.0
8							1.0	15.0	20.0	25.0	---	22.0
9							1.0	---	17.0	25.0	23.0	23.0
10							1.0	18.0	19.0	24.0	22.0	23.0
11							---	17.0	19.0	---	22.0	22.0
12							6.0	16.0	20.0	27.0	22.0	---
13							8.0	16.0	---	27.0	22.0	17.0
14							10.0	16.0	22.0	27.0	23.0	15.0
15							12.0	16.0	21.0	27.0	---	14.0
16							11.0	---	22.0	28.0	26.0	14.0
17							12.0	17.0	22.0	26.0	27.0	15.0
18							---	18.0	21.0	---	27.0	16.0
19							10.0	19.0	21.0	27.0	28.0	---
20							10.0	18.0	---	28.0	27.0	---
21							11.0	18.0	21.0	28.0	26.0	---
22							11.0	18.0	23.0	28.0	---	---
23							13.0	---	23.0	28.0	26.0	---
24							14.0	17.0	23.0	29.0	26.0	---
25							---	17.0	23.0	---	23.0	---
26							13.0	17.0	23.0	25.0	23.0	---
27							13.0	18.0	---	26.0	21.0	---
28							14.0	19.0	26.0	27.0	---	---
29							13.0	19.0	23.0	27.0	---	---
30							13.0	---	22.0	26.0	22.0	---
31							---	---	---	26.0	23.0	---
MEAN							9.0	17.0	21.0	26.0	25.0	19.0

06475000 JAMES RIVER NEAR REDFIELD, SD

LOCATION.--Lat 44°54'33", long 98°27'34", in NW¼NE¼ sec.31, T.117 N., R.63 W., Spink County, Hydrologic Unit 10160006, on right bank 0.6 mi (1.0 km) downstream from county highway bridge, 3.3 mi (5.3 km) northeast of Redfield and 1.3 mi (2.1 km) downstream from Turtle Creek.

DRAINAGE AREA.--14,800 mi^2 (38,300 km^2), approximately, of which about 4,600 mi^2 (11,900 km^2) is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,239.2 ft (377.71 m) National Geodetic Vertical Datum of 1929. From March 1950 to July 25, 1951, nonrecording gage. From July 26, 1951, to Sept. 30, 1981, water-stage recorder. Both gages described above at site 3.9 mi (4.17 km) downstream from present site and at different datum.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Arrowwood and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 303 mi (488 km) upstream since May 1953. Low flow affected by wind at times. Flow below 100 ft^3/s (2.832 m) for water years 1964-79 may be unreliable because of wind effect. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--32 years, 186 ft^3/s (5.268 m^3/s), 134,800 acre-ft/yr (166 hm^3/yr); median of yearly mean discharges, 120 ft^3/s (3.40 m^3/s), 86,900 acre-ft/yr (110 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,310 ft^3/s (207 m^3/s) Apr. 13, 1969, gage height, 24.93 ft (7.599 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft^3/s (29.2 m^3/s) at 1630 hours, May 3, gage height, 8.74 ft (2.664 m); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Feb. 17 to Apr. 8)

3.0	38	5.0	338
3.5	92	7.0	649
4.0	172	8.7	1020

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	16	300	988	735	254	45	90
2	.00	.00	.00	.00	.00	15	481	998	715	244	45	89
3	.00	.00	.00	.00	.00	12	836	1020	699	241	46	85
4	.00	.00	.00	.00	.00	12	919	1020	681	226	48	84
5	.00	.00	.00	.00	.00	10	895	1020	665	211	51	85
6	.00	.00	.00	.00	.00	10	770	1010	669	192	53	83
7	.00	.00	.00	.00	.00	9.0	704	1010	646	178	56	83
8	.00	.00	.00	.00	.00	9.0	783	1010	633	165	58	81
9	.00	.00	.00	.00	.00	10	856	1010	622	153	60	82
10	.00	.00	.00	.00	.00	19	852	1010	604	143	62	80
11	.00	.00	.00	.00	.00	25	805	990	577	135	65	82
12	.00	.00	.00	.00	.00	25	765	983	548	126	68	86
13	.00	.00	.00	.00	.00	25	735	975	524	118	73	83
14	.00	.00	.00	.00	.00	30	737	985	499	110	75	84
15	.00	.00	.00	.00	.00	32	745	1000	479	106	76	85
16	.00	.00	.00	.00	.00	30	747	1000	466	98	76	85
17	.00	.00	.00	.00	1.0	20	761	985	452	89	77	88
18	.00	.00	.00	.00	3.0	10	777	967	436	81	77	89
19	.00	.00	.00	.00	6.0	60	808	949	418	75	79	92
20	.00	.00	.00	.00	10	200	836	927	402	69	78	91
21	.00	.00	.00	.00	25	220	855	907	386	71	77	89
22	.00	.00	.00	.00	60	150	879	888	372	65	78	88
23	.00	.00	.00	.00	50	140	898	871	359	60	78	87
24	.00	.00	.00	.00	40	130	915	857	342	56	80	84
25	.00	.00	.00	.00	30	130	927	843	327	51	79	82
26	.00	.00	.00	.00	20	100	931	832	315	53	82	82
27	.00	.00	.00	.00	18	110	946	819	303	52	79	80
28	.00	.00	.00	.00	16	50	964	801	291	51	79	79
29	.00	.00	.00	.00	---	80	975	781	277	47	85	75
30	.00	.00	.00	.00	---	150	977	769	266	45	83	73
31	.00	---	.00	.00	---	230	---	751	---	45	88	---
TOTAL	.00	.00	.00	.00	279.00	2069.0	24379	28976	14708	3610	2156	2526
MEAN	.000	.000	.000	.000	9.96	66.7	813	935	490	116	69.5	84.2
MAX	.00	.00	.00	.00	60	230	977	1020	735	254	88	92
MIN	.00	.00	.00	.00	.00	9.0	300	751	266	45	45	73
AC-FT	.00	.00	.00	.00	553	4100	48360	57470	29170	7160	4280	5010

CAL YR 1981 TOTAL 2575.58 MEAN 7.06 MAX 72 MIN .00 AC-FT 5110
WTR YR 1982 TOTAL 78703.00 MEAN 216 MAX 1020 MIN .00 AC-FT 156110

06476000 JAMES RIVER AT HURON, SD

LOCATION.--Lat 44°21'49", long 98°11'56", in SW¼SE¼NE¼ sec.6, T.110 N., R.61 W., Beadle County, Hydrologic Unit 10160006, on right bank 15 ft (5 m) upstream from city dam at Huron, 135 ft (41 m) downstream from Chicago and North Western Transportation Co. bridge and 165 ft (50 m) upstream from bridge on business loop U.S. Highway 14.

DRAINAGE AREA.--16,800 mi² (43,500 km), approximately, of which about 4,790 mi² (12,400 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to September 1932, August 1943 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at site about 100 ft (30 m) downstream for period of open water each year July 1902 to June 1914 and for period March to June 1915-23 are in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 1,223.44 ft (372.905 m) National Geodetic Vertical Datum of 1929. Aug. 29, 1928, to Mar. 15, 1929, nonrecording gage at site 100 ft (30 m) downstream at about same datum. Mar. 16, 1929, to June 30, 1932, nonrecording gage 165 ft (50 m) downstream at present datum. Aug. 3, 1943, to Oct. 17, 1951, nonrecording gage at site 15 ft (5 m) downstream at present datum.

REMARKS.--Records good above 100 ft³/s (2.832 m³/s) and fair below. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity 229,470 acre-ft (283 hm³), 365 mi (587 km) upstream since May 1953. Satellite telemeter at station.

AVERAGE DISCHARGE.--43 years, 229 ft³/s (6.485 m³/s), 165,900 acre-ft/yr (205 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,000 ft³/s (255 m³/s) Apr. 13, 1969, gage height, 16.70 ft (5.090 m); no flow for long periods in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood between Apr. 11 and 13, 1881, reached a stage of 19.8 ft (6.04 m), from U.S. Weather Bureau publication. Flood of Mar. 22, 1922, reached a stage of 16.5 ft (5.03 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,150 ft³/s (32.6 m³/s) at 0230 hours, May 11, gage height, 10.11 ft (3.082 m); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 14)

8.77	0	9.40	292
8.80	6.8	9.80	680
9.00	62	10.20	1,320
9.2	147		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	84	184	964	766	220	69	91
2	.00	.00	.00	.00	.00	80	264	931	730	220	56	97
3	.00	.00	.00	.00	.00	59	286	919	705	202	62	131
4	.00	.00	.00	.00	.00	50	358	1040	658	165	56	119
5	.00	.00	.00	.00	.00	44	693	1070	637	159	50	121
6	.00	.00	.00	.00	.00	35	1110	1040	659	157	41	117
7	.00	.00	.00	.00	.00	30	930	1030	654	157	35	104
8	.00	.00	.00	.00	.00	27	885	973	406	129	35	96
9	.00	.00	.00	.00	.00	24	840	991	439	141	27	94
10	.00	.00	.00	.00	.00	24	860	1080	526	124	27	95
11	.00	.00	.00	.00	.00	32	847	1110	766	108	9.3	104
12	.00	.00	.00	.00	.00	32	910	1080	704	95	.00	121
13	.00	.00	.00	.00	.00	38	838	1040	608	86	19	114
14	2.0	.00	.00	.00	.00	44	781	1070	551	85	22	121
15	.00	.00	.00	.00	.00	50	799	1030	385	102	32	112
16	.00	.00	.00	.00	.00	50	816	1050	329	66	38	109
17	.00	.00	.00	.00	.00	56	753	1040	376	87	38	115
18	.00	.00	.00	.00	.00	56	754	1020	390	83	38	107
19	.00	.00	.00	.00	.00	59	802	991	383	72	47	113
20	.00	.00	.00	.00	.00	59	851	962	382	69	50	103
21	.00	.00	.00	.00	.00	59	830	942	366	76	27	99
22	.00	.00	.00	.00	80	59	820	922	357	72	50	91
23	.00	.00	.00	.00	106	62	813	865	329	62	50	100
24	.00	.00	.00	.00	76	68	859	882	348	62	56	102
25	.00	.00	.00	.00	77	78	943	900	320	66	47	91
26	.00	.00	.00	.00	66	88	906	892	301	90	56	90
27	.00	.00	.00	.00	66	97	885	866	292	80	56	81
28	.00	.00	.00	.00	77	113	901	824	276	80	50	83
29	.00	.00	.00	.00	---	130	896	842	260	83	62	94
30	.00	.00	.00	.00	---	145	995	860	252	68	66	89
31	.00	---	.00	.00	---	159	---	813	---	69	84	---
TOTAL	2.00	.00	.00	.00	548.00	1991	23429	30039	14155	3355	1355.30	3104
MEAN	.065	.000	.000	.000	19.6	64.2	781	969	472	108	43.7	103
MAX	2.0	.00	.00	.00	106	159	1110	1110	766	220	84	131
MIN	.00	.00	.00	.00	.00	24	184	813	252	62	.00	81
AC-FT	4.0	.00	.00	.00	1090	3950	46470	59580	28080	6650	2690	6160

CAL YR 1981 TOTAL 2762.90 MEAN 7.57 MAX 77 MIN .00 AC-FT 5480
WTR YR 1982 TOTAL 77978.30 MEAN 214 MAX 1110 MIN .00 AC-FT 154700

06476000 JAMES RIVER AT HURON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-52, 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1956 to October 1970, September 1971 to current year.
WATER TEMPERATURES: September 1956 to October 1970, September 1971 to current year.

REMARKS.--No flow Oct. 1-13, 15-31, Nov. 1 to Feb. 21, Aug. 12. Samples collected once daily by observer.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,170 micromhos Mar. 14, 1965; minimum daily, 175 micromhos Mar. 30, Apr. 2, 1960.
WATER TEMPERATURES: Maximum daily, 31.0°C June 2, 1968; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed daily, 1,360 micromhos Mar. 14; minimum observed daily, 360 micromhos Apr. 10.
WATER TEMPERATURES: Maximum observed daily, 26.0°C July 22-26, Aug. 5-8; minimum observed daily, 0.0°C on many days during winter flow period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
FEB									
26...	1300	66	700	7.5	1.0	241	81	52	27
APR									
05...	1500	804	720	8.2	2.0	216	46	47	24
30...	1530	583	420	--	15.0	127	17	31	12
MAY									
18...	1200	1040	690	7.9	18.0	220	0	50	23
JUN									
11...	1300	822	690	8.2	21.0	235	13	53	25
JUL									
27...	1630	83	890	8.5	28.0	298	0	65	33
SEP									
03...	1200	100	950	7.8	23.0	331	29	70	38
30...	1000	75	970	8.0	14.0	341	9	74	38

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB									
26...	71	37	2.0	18	160	180	38	.2	9.6
APR									
05...	91	46	2.8	14	170	170	64	.3	12
30...	26	28	1.0	13	110	72	14	.2	6.9
MAY									
18...	58	35	1.8	14	210	110	30	.2	10
JUN									
11...	56	33	1.6	14	222	100	26	.2	9.9
JUL									
27...	80	35	2.1	15	322	130	36	.2	.6
SEP									
03...	90	36	2.2	16	302	160	50	.3	2.5
30...	92	36	2.2	17	332	150	36	.3	21

06476000 JAMES RIVER AT HURON, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
FEB								
26...	498	.67	88.7	1.3	.550	.490	.460	1.4
APR								
05...	527	.71	1150	.42	.580	.560	.450	1.4
30...	241	.33	640	<.10	.360	.150	.090	.28
MAY								
18...	422	.57	1190	<.10	.460	.360	.250	.77
JUN								
11...	418	.57	930	<.10	.320	.230	.240	.74
JUL								
27...	554	.75	123	<.10	.260	.160	.180	.55
SEP								
03...	611	.83	236	.56	.210	.070	.060	.18
30...	628	.85	124	<.10	.310	.210	.230	.71

< Less than.

06476000 JAMES RIVER AT HURON, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						590	900	370	650	810	900	1040
2						590	900	410	650	810	900	1020
3						660	850	420	670	830	910	1000
4						590	860	450	660	840	920	1000
5						630	870	470	660	850	930	1020
6						720	670	500	680	830	930	1000
7						750	450	540	680	850	950	1030
8						750	510	600	680	860	960	1080
9						1120	550	620	690	860	1000	980
10						1120	360	640	700	860	1020	940
11						1270	400	670	700	870	1090	930
12						1200	440	680	690	870	---	910
13						1260	460	690	690	880	1120	910
14						1360	470	710	690	880	1140	930
15						1140	500	720	710	880	1140	960
16						1260	560	720	700	860	1140	980
17						1280	570	730	730	850	1080	1000
18						1180	590	730	730	860	1080	1010
19						1180	570	730	740	870	1080	1020
20						1160	550	690	760	880	1060	1010
21						1100	500	670	760	880	1020	1030
22						1330	500	670	760	880	1040	1040
23						1170	480	680	730	890	1040	1040
24						810	460	670	770	900	1200	1030
25						950	420	650	770	910	1060	1020
26						930	410	650	780	920	1060	1020
27						970	400	640	780	1050	1060	1040
28						980	400	660	790	900	1040	1040
29						990	400	640	800	900	1040	1040
30						1040	400	640	800	900	1040	1040
31						960	---	650	---	890	1040	---
MEAN						1000	547	623	720	875	1030	1000

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	.0	.0	12.0	14.0	22.0	23.0	20.0
2					---	.0	.0	13.0	16.0	22.0	25.0	21.0
3					---	.0	1.0	15.0	16.0	22.0	25.0	20.0
4					---	.0	1.0	17.0	16.0	22.0	24.0	20.0
5					---	.0	.0	17.0	16.0	23.0	26.0	20.0
6					---	.0	.0	13.0	16.0	25.0	26.0	20.0
7					---	.0	1.0	13.0	16.0	23.0	26.0	20.0
8					---	.0	.0	13.0	17.0	23.0	26.0	20.0
9					---	.0	.0	13.0	18.0	23.0	24.0	21.0
10					---	.0	.0	15.0	17.0	22.0	22.0	20.0
11					---	.0	.0	16.0	17.0	22.0	22.0	20.0
12					---	.0	4.0	15.0	17.0	23.0	---	18.0
13					---	.0	5.0	15.0	17.0	23.0	21.0	18.0
14					---	.0	7.0	15.0	18.0	24.0	21.0	16.0
15					---	.0	9.0	15.0	19.0	23.0	20.0	14.0
16					---	.0	10.0	14.0	19.0	25.0	22.0	14.0
17					---	.0	9.0	16.0	20.0	25.0	23.0	14.0
18					---	1.0	10.0	16.0	20.0	25.0	24.0	14.0
19					---	1.0	10.0	17.0	20.0	25.0	25.0	13.0
20					---	1.0	7.0	17.0	20.0	25.0	25.0	13.0
21					---	1.0	8.0	17.0	20.0	25.0	25.0	13.0
22					.0	.0	7.0	17.0	20.0	26.0	23.0	13.0
23					.0	.0	9.0	17.0	20.0	26.0	23.0	13.0
24					.0	.0	10.0	17.0	20.0	26.0	23.0	14.0
25					.0	.0	10.0	16.0	20.0	26.0	23.0	13.0
26					.0	.0	10.0	16.0	20.0	26.0	22.0	13.0
27					.0	.0	11.0	16.0	20.0	23.0	22.0	14.0
28					.0	.0	12.0	17.0	23.0	25.0	22.0	15.0
29					---	.0	12.0	16.0	22.0	24.0	22.0	15.0
30					---	.0	12.0	16.0	23.0	23.0	20.0	14.0
31					---	.0	---	15.0	---	23.0	20.0	---
MEAN					.0	.0	6.0	15.5	18.5	24.0	23.0	16.5

06476500 SAND CREEK NEAR ALPENA, SD

LOCATION.--Lat 44°09'15", long 98°26'06", in NE¼NE¼ sec.19, T.108 N., R.63 W., Jerauld County, Hydrologic Unit 10160006, on left bank 5 ft (2 m) downstream from highway bridge, 4.0 mi (6.4 km) southwest of Alpena, 7.0 mi (11.3 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 10.5 mi (16.9 km) upstream from interlink with Cain Creek.

DRAINAGE AREA.--240 mi² (622 km²), approximately.

PERIOD OF RECORD.--March 1950 to current year.

REVISED RECORDS.--WSP 1309: 1950(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,315 ft (401 m). Prior to Sept. 17, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--32 years, 8.35 ft³/s (0.236 m³/s), 6,050 acre-ft/yr (7.46 hm³/yr); median of yearly mean discharges, 4.6 ft³/s (0.13 m³/s), 3,300 acre-ft/yr (4.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,240 ft³/s (63.4 m³/s) Mar. 28, 1960, gage height, 13.35 ft (4.069 m); maximum gage height, 14.1 ft (4.30 m) Mar. 28, 1950 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35 ft³/s (0.99 m³/s) at 1645 hours, Mar. 1, gage height, 9.13 ft (2.783 m), backwater from ice, no peak above base of 50 ft³/s (1.42 m³/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Feb. 23 to Mar. 12)

7.4	0	7.8	1.7
7.5	.12	7.9	3.1
7.6	.40	8.1	9.1
7.7	.88	8.3	16

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	27	13	.01	2.4	.00	.00	.00
2	.00	.00	.00	.00	.00	21	9.5	.00	2.4	.00	.00	.00
3	.00	.00	.00	.00	.00	16	3.1	.00	2.4	.00	.00	.00
4	.00	.00	.00	.00	.00	12	3.1	.00	2.2	.00	.00	.00
5	.00	.00	.00	.00	.00	11	3.3	.00	1.9	.00	.00	.00
6	.00	.00	.00	.00	.00	9.5	3.4	.00	1.8	.00	.00	.00
7	.00	.00	.00	.00	.00	8.1	3.7	.00	1.5	.00	.00	.00
8	.00	.00	.00	.00	.00	7.1	3.3	.00	1.4	.00	.00	.00
9	.00	.00	.00	.00	.00	6.4	2.7	.00	1.2	.00	.00	.00
10	.00	.00	.00	.00	.00	6.4	2.9	.00	.98	.00	.00	.00
11	.00	.00	.00	.00	.00	6.5	2.6	.00	1.0	.00	.00	.00
12	.00	.00	.00	.00	.00	6.8	2.2	.00	.94	.00	.00	.00
13	.00	.00	.00	.00	.00	7.6	1.7	.04	.81	.00	.00	.00
14	.00	.00	.00	.00	.00	10	1.3	.37	.88	.00	.00	.00
15	.00	.00	.00	.00	.00	12	1.1	1.3	.77	.00	.00	.00
16	.00	.00	.00	.00	.00	12	.82	2.5	.59	.00	.00	.00
17	.00	.00	.00	.00	.00	11	.66	4.6	.45	.00	.00	.00
18	.00	.00	.00	.00	.00	9.7	.52	3.1	.35	.00	.00	.00
19	.00	.00	.00	.00	.00	9.7	.52	2.3	.30	.00	.00	.00
20	.00	.00	.00	.00	.00	7.9	.52	2.5	.26	.00	.00	.00
21	.00	.00	.00	.00	.00	4.0	.44	4.0	.20	.00	.00	.00
22	.00	.00	.00	.00	.00	5.5	.42	3.7	.14	.00	.00	.00
23	.00	.00	.00	.00	.50	3.1	.35	2.7	.11	.00	.00	.00
24	.00	.00	.00	.00	3.0	2.1	.27	2.2	.08	.00	.00	.00
25	.00	.00	.00	.00	14	1.5	.19	1.8	.06	.00	.00	.00
26	.00	.00	.00	.00	12	1.1	.13	2.2	.04	.01	.00	.00
27	.00	.00	.00	.00	10	1.1	.10	1.9	.03	.07	.00	.00
28	.00	.00	.00	.00	9.5	2.9	.07	1.8	.00	.06	.00	.00
29	.00	.00	.00	.00	---	7.6	.04	1.9	.00	.04	.00	.00
30	.00	.00	.00	.00	---	11	.04	3.4	.00	.02	.00	.00
31	.00	---	.00	.00	---	14	---	2.5	---	.02	.00	---
TOTAL	.00	.00	.00	.00	49.00	271.6	61.99	44.82	25.19	.22	.00	.00
MEAN	.000	.000	.000	.000	1.75	8.76	2.07	1.45	.84	.007	.000	.000
MAX	.00	.00	.00	.00	14	27	13	4.6	2.4	.07	.00	.00
MIN	.00	.00	.00	.00	.00	1.1	.04	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	97	539	123	89	50	.4	.00	.00

CAL YR 1981 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00
WTR YR 1982 TOTAL 452.82 MEAN 1.24 MAX 27 MIN .00 AC-FT 898

06477000 JAMES RIVER NEAR FORESTBURG, SD

LOCATION.--Lat 43°58'26", long 98°04'14", in SW¼SW¼NW¼ sec.20, T.106 N., R.60 W., Sanborn County, Hydrologic Unit 10160011, on right bank 5.0 ft (2 m) downstream from highway bridge, 3.8 mi (6.1 km) southeast of Forestburg, 5.4 mi (8.7 km) downstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 6.1 mi (9.8 km) downstream from Sand Creek.

DRAINAGE AREA.--18,600 mi² (48,200 km²), approximately, of which about 4,790 mi² (12,400 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,208.34 ft (368.302 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Sept. 5, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 408 mi (656 km) upstream since May 1953. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--32 years, 270 ft³/s (7.646 m³/s), 195,600 acre-ft/yr (241 hm³/yr); median of yearly mean discharges, 140 ft³/s (3.96 m³/s), 101,000 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s (354 m³/s) Apr. 9, 1969, gage height, 17.16 ft (5.230 m); no flow at times in 1950, 1955, 1959, 1961, 1970, 1976, 1977, 1981, 1982.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in March 1920 and March 1922 reached a stage of about 18 ft (5.49 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,050 ft³/s (29.7 m³/s) at 0315 hours, May 13, and 0930 hours, May 15, gage height, 8.37 ft (2.551 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	27	.46	.02	190	163	910	907	280	85	53
2	.00	.00	24	.37	.02	160	158	928	868	264	74	70
3	.00	.00	25	.33	.01	130	201	926	825	256	72	83
4	.00	.00	22	.24	.00	150	181	919	788	241	69	87
5	.00	.00	20	.15	.00	140	276	943	751	210	63	112
6	.00	.00	17	.12	.00	120	428	975	729	196	61	126
7	.00	.00	14	.08	.00	110	723	982	718	187	52	121
8	.00	.00	12	.04	.00	100	661	980	723	178	43	113
9	.00	.00	9.2	.03	.00	90	867	962	635	170	35	103
10	.00	.00	7.1	.01	.00	80	832	962	527	158	28	92
11	.00	.00	6.2	.01	.00	70	814	989	507	153	23	89
12	.00	.00	5.2	.01	.00	64	794	1030	613	140	18	105
13	.00	.00	4.3	.00	.00	58	799	1040	709	121	16	117
14	.00	.00	3.5	.00	.00	58	790	1040	716	105	13	128
15	.00	.00	3.0	.00	.00	60	761	1040	675	114	12	121
16	.00	.00	2.4	.00	.00	64	741	1040	582	143	10	115
17	.00	.00	1.9	.00	.00	72	741	1020	462	163	8.7	108
18	.00	.00	1.6	.00	.01	90	719	1020	407	135	7.2	103
19	.00	.00	1.3	.00	1.0	100	702	1010	397	114	6.7	99
20	.00	.00	1.1	.00	9.2	95	717	1000	395	101	9.2	96
21	.00	.00	1.0	.00	14	98	708	980	393	105	13	93
22	.00	.00	.97	.00	28	101	763	959	386	104	18	89
23	.00	.00	.85	.06	40	106	777	940	376	99	23	82
24	.00	.00	.82	.07	29	92	790	916	359	86	32	78
25	.00	1.3	.77	.06	23	75	814	902	355	76	32	77
26	.00	7.6	.74	.05	20	80	849	924	346	79	41	76
27	.00	13	.74	.04	14	76	871	926	332	109	40	74
28	.00	15	.69	.04	45	95	874	911	318	128	35	67
29	.00	17	.67	.04	---	126	876	883	302	113	32	65
30	.00	22	.59	.03	---	135	884	900	292	105	33	64
31	.00	---	.56	.03	---	170	---	923	---	97	44	---
TOTAL	.00	75.90	216.20	2.27	223.26	3155	20514	29880	16393	4530	1048.8	2806
MEAN	.000	2.53	6.97	.073	7.97	102	684	964	546	146	33.8	93.5
MAX	.00	22	27	.46	45	190	884	1040	907	280	85	128
MIN	.00	.00	.56	.00	.00	58	158	883	292	76	6.7	53
AC-FT	.00	151	429	4.5	443	6260	40690	59270	32520	8990	2080	5570

CAL YR 1981 TOTAL 3549.18 MEAN 9.72 MAX 60 MIN .00 AC-FT 7040
WTR YR 1982 TOTAL 78844.43 MEAN 216 MAX 1040 MIN .00 AC-FT 156400

06477000 JAMES RIVER NEAR FORESTBURG, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: Oct. 1, 1981, to Sept. 30, 1982.

REMARKS.--Records poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 300 mg/L Mar. 1; minimum daily, 0 mg/L on many days.
SEDIMENT LOADS: Maximum daily, 445 tons (404 tonnes) Apr. 9; minimum daily, 0 ton (0 tonne) on many days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.00	0	.00	27	90	6.6
2	.00	0	.00	.00	0	.00	24	80	5.2
3	.00	0	.00	.00	0	.00	25	60	4.1
4	.00	0	.00	.00	0	.00	22	50	3.0
5	.00	0	.00	.00	0	.00	20	40	2.2
6	.00	0	.00	.00	0	.00	17	30	1.4
7	.00	0	.00	.00	0	.00	14	20	.76
8	.00	0	.00	.00	0	.00	12	10	.32
9	.00	0	.00	.00	0	.00	9.2	8	.20
10	.00	0	.00	.00	0	.00	7.1	6	.12
11	.00	0	.00	.00	0	.00	6.2	5	.08
12	.00	0	.00	.00	0	.00	5.2	4	.06
13	.00	0	.00	.00	0	.00	4.3	3	.03
14	.00	0	.00	.00	0	.00	3.5	2	.02
15	.00	0	.00	.00	0	.00	3.0	1	.00
16	.00	0	.00	.00	0	.00	2.4	1	.00
17	.00	0	.00	.00	0	.00	1.9	1	.00
18	.00	0	.00	.00	0	.00	1.6	1	.00
19	.00	0	.00	.00	0	.00	1.3	1	.00
20	.00	0	.00	.00	0	.00	1.1	1	.00
21	.00	0	.00	.00	0	.00	1.0	1	.00
22	.00	0	.00	.00	0	.00	.97	1	.00
23	.00	0	.00	.00	0	.00	.85	1	.00
24	.00	0	.00	.00	0	.00	.82	1	.00
25	.00	0	.00	1.3	2	.00	.77	1	.00
26	.00	0	.00	7.6	5	.10	.74	1	.00
27	.00	0	.00	13	10	.35	.74	1	.00
28	.00	0	.00	15	20	.81	.69	1	.00
29	.00	0	.00	17	60	2.8	.67	1	.00
30	.00	0	.00	22	80	4.8	.59	1	.00
31	.00	0	.00	---	---	---	.56	1	.00
TOTAL	0.00	---	0.00	75.90	---	8.86	216.20	---	24.09

06477000 JAMES RIVER NEAR FORESTBURG, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.46	1	.00	.02	0	.00	190	300	154
2	.37	1	.00	.02	0	.00	160	250	108
3	.33	1	.00	.01	0	.00	130	250	88
4	.24	1	.00	.00	0	.00	150	250	101
5	.15	0	.00	.00	0	.00	140	200	76
6	.12	0	.00	.00	0	.00	120	200	65
7	.08	0	.00	.00	0	.00	110	150	45
8	.04	0	.00	.00	0	.00	160	150	40
9	.03	0	.00	.00	0	.00	90	150	36
10	.01	0	.00	.00	0	.00	80	100	22
11	.01	0	.00	.00	0	.00	70	100	19
12	.01	0	.00	.00	0	.00	64	100	17
13	.00	0	.00	.00	0	.00	58	100	16
14	.00	0	.00	.00	0	.00	58	100	16
15	.00	0	.00	.00	0	.00	60	100	16
16	.00	0	.00	.00	0	.00	64	100	17
17	.00	0	.00	.00	0	.00	72	100	19
18	.00	0	.00	.01	0	.00	90	150	36
19	.00	0	.00	1.0	1	.00	100	150	40
20	.00	0	.00	9.2	5	.12	95	150	38
21	.00	0	.00	14	20	.76	98	150	40
22	.00	0	.00	28	40	3.0	101	150	41
23	.06	0	.00	40	70	7.6	106	150	43
24	.07	0	.00	29	60	4.7	92	100	25
25	.06	0	.00	23	50	3.1	75	90	18
26	.05	0	.00	20	40	2.2	80	80	17
27	.04	0	.00	14	30	1.1	76	60	12
28	.04	0	.00	45	200	24	95	80	21
29	.04	0	.00	---	---	---	126	90	31
30	.03	0	.00	---	---	---	135	100	36
31	.03	0	.00	---	---	---	170	110	50
TOTAL	2.27	---	0.00	223.26	---	46.58	3155	---	1303
		APRIL			MAY			JUNE	
1	163	120	53	910	55	135	907	70	171
2	158	130	55	928	55	138	868	75	176
3	201	140	76	926	50	125	825	75	167
4	181	150	73	919	50	124	788	75	160
5	276	150	112	943	50	127	751	75	152
6	428	160	185	975	50	132	729	75	148
7	723	180	351	982	50	133	718	75	145
8	861	190	442	980	45	119	723	75	146
9	867	190	445	962	45	117	635	70	120
10	832	150	337	962	45	117	527	60	85
11	814	100	220	989	45	120	507	60	82
12	794	90	193	1030	45	125	613	80	132
13	799	80	173	1040	45	126	709	90	172
14	790	70	149	1040	45	126	716	90	174
15	761	50	103	1040	45	126	675	85	155
16	741	50	100	1040	45	126	582	85	134
17	741	50	100	1020	45	124	462	70	87
18	719	50	97	1020	45	124	407	70	77
19	702	50	95	1010	45	123	397	70	75
20	717	50	97	1000	45	121	395	70	75
21	749	50	101	980	45	119	393	70	74
22	763	50	103	959	45	117	386	70	73
23	777	50	105	940	45	114	376	70	71
24	790	50	107	916	45	111	359	65	63
25	814	50	110	902	45	110	355	65	62
26	849	55	126	924	50	125	346	65	61
27	871	55	129	926	50	125	332	65	58
28	874	55	130	911	50	123	318	65	56
29	876	55	130	883	50	119	302	65	53
30	884	55	131	900	60	146	292	65	51
31	---	---	---	923	70	174	---	---	---
TOTAL	20514	---	4628	29880	---	3891	16393	---	3255

06477000 JAMES RIVER NEAR FORESTBURG, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	280	60	45	85	60	14	53	90	13
2	264	60	43	74	55	11	70	100	19
3	256	60	41	72	55	11	83	150	34
4	241	60	39	69	55	10	87	180	42
5	210	60	34	63	55	9.4	112	190	57
6	196	60	32	61	55	9.1	126	200	68
7	187	60	30	52	50	7.0	121	180	59
8	178	55	26	43	50	5.8	113	150	46
9	170	55	25	35	50	4.7	103	110	31
10	158	55	23	28	50	3.8	92	100	25
11	153	55	23	23	50	3.1	89	100	24
12	140	55	21	18	50	2.4	105	100	28
13	121	55	18	16	50	2.2	117	110	35
14	105	55	16	13	50	1.8	128	120	41
15	114	70	22	12	50	1.6	121	120	39
16	143	75	29	10	50	1.4	115	120	37
17	163	80	35	8.7	50	1.2	108	110	32
18	135	70	26	7.2	50	.97	103	110	31
19	114	60	18	6.7	50	.90	99	110	29
20	101	60	16	9.2	55	1.4	96	110	29
21	105	60	17	13	60	2.1	93	110	28
22	104	60	17	18	65	3.2	89	110	26
23	99	60	16	23	70	4.3	82	110	24
24	86	50	12	32	70	6.0	78	100	21
25	76	50	10	32	70	6.0	77	100	21
26	79	50	11	41	80	8.9	76	100	21
27	109	60	18	40	80	8.6	74	100	20
28	128	80	28	35	75	7.1	67	100	18
29	113	80	24	32	75	6.5	65	100	18
30	105	70	20	33	75	6.7	64	100	17
31	97	65	17	44	80	9.5	---	---	---
TOTAL	4530	---	752	1048.8	---	171.67	2806	---	933

06477500 FIRESTEEL CREEK NEAR MOUNT VERNON, SD

LOCATION.--Lat 43°46'30", long 98°14'33", in SW¼SW¼ sec.26, T.104 N., R.62 W., Davison County, Hydrologic Unit 10160011, near center of span on downstream side of highway bridge, 4.5 mi (7.2 km) north of Mount Vernon, 5.2 mi (8.4 km) downstream from West Firesteel Creek, and 12 mi (19 km) northwest of Mitchell.

DRAINAGE AREA.--540 mi² (1,400 km²), approximately.

PERIOD OF RECORD.--September 1955 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,297.22 ft (395.393 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1972, nonrecording gage and crest-stage gage.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--27 years, 19.8 ft³/s (0.561 m³/s), 14,350 acre-ft/yr (17.7 hm³/yr); median of yearly mean discharges, 7.9 ft³/s (0.22 m³/s), 5,700 acre-ft/yr (7.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,610 ft³/s (187 m³/s) Apr. 4, 1969, gage height, 15.34 ft (4.676 m); maximum gage height, 17.12 ft (5.218 m) Apr. 3, 1969 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 27	0800	*350	9.91	a*7.60	2.316	May 31	1730	287	8.13	6.22	1.896
Mar. 1	2100	150	4.25	6.05	1.844						

a Backwater from ice.
No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.03	.10	.00	.00	130	43	.71	247	1.7	.04	.08
2	.00	.02	.16	.00	.00	120	44	.60	210	1.4	.03	.04
3	.00	.05	.20	.00	.00	96	23	.20	141	1.2	.06	.02
4	.00	.06	.25	.00	.00	81	13	.35	120	1.2	.10	.01
5	.00	.10	.13	.00	.00	64	7.4	.30	79	.89	.06	.00
6	.00	.04	.25	.00	.00	50	4.5	.20	63	1.0	.05	.00
7	.00	.05	.20	.00	.00	38	10	.25	50	1.1	.04	.00
8	.00	.02	.13	.00	.00	32	10	.35	43	.83	.05	.00
9	.02	.02	.10	.00	.00	24	9.0	.35	34	.65	.04	.00
10	.02	.03	.10	.00	.00	21	8.1	.45	22	.50	.02	.04
11	.02	.03	.10	.00	.00	22	7.6	.60	19	.60	.02	.05
12	.03	.04	.08	.00	.00	25	7.2	.65	17	.50	.02	.50
13	.06	.03	.06	.00	.00	28	8.9	.60	15	.50	.02	.25
14	.35	.05	.04	.00	.00	34	9.4	.60	16	.45	.05	.13
15	.25	.04	.02	.00	.00	50	12	.77	13	.50	.08	.13
16	.35	.04	.01	.00	.00	47	22	.77	10	.30	.06	.16
17	.30	.02	.00	.00	.00	42	24	.89	10	.35	.04	.13
18	.16	.08	.00	.00	.00	38	12	.77	9.4	.16	.05	.10
19	.13	.16	.00	.00	.00	34	7.6	24	8.9	.30	.03	.06
20	.16	.13	.00	.00	.00	30	3.0	30	7.6	.13	.02	.06
21	.08	.08	.00	.00	2.0	27	3.5	28	8.9	.35	.01	.06
22	.08	.20	.00	.00	30	23	3.0	26	5.9	.40	.02	.04
23	.05	.08	.00	.00	20	23	1.6	19	4.8	.16	.03	.04
24	.04	.08	.00	.00	10	20	1.4	17	3.8	.13	.60	.03
25	.05	.06	.00	.00	15	17	1.2	22	1.8	.13	.06	.03
26	.04	.05	.00	.00	70	15	1.1	24	2.5	.20	.10	.02
27	.03	.05	.00	.00	320	13	1.2	23	2.1	.35	.04	.02
28	.04	.04	.00	.00	250	28	.89	25	2.5	.13	.02	.02
29	.05	.06	.00	.00	---	27	.77	28	2.0	.10	.02	.02
30	.04	.06	.00	.00	---	30	.77	136	1.7	.06	.02	.02
31	.03	---	.00	.00	---	36	---	229	---	.05	.08	---
TOTAL	2.38	1.80	1.93	.00	717.06	1265	301.13	640.41	1170.9	16.32	1.88	2.06
MEAN	.077	.060	.062	.000	25.6	40.8	10.0	20.7	39.0	.53	.061	.069
MAX	.35	.20	.25	.00	320	130	44	229	247	1.7	.60	.50
MIN	.00	.02	.00	.00	.00	13	.77	.20	1.7	.05	.01	.00
AC-FT	4.7	3.6	3.8	.00	1420	2510	597	1270	2320	32	3.7	4.1

CAL YR 1981 TOTAL 39.09 MEAN .11 MAX 2.5 MIN .00 AC-FT 78
WTR YR 1982 TOTAL 4120.81 MEAN 11.3 MAX 320 MIN .00 AC-FT 8170

06478052 ENEMY CREEK NEAR MITCHELL, SD

LOCATION.--Lat 43°38'33", long 97°59'09", in NW¼NW¼ sec.13, T.102 N., R.60 W., Davison County, Hydrologic Unit 10160011, on left bank 3 ft (0.9 m) downstream from highway bridge, 4.5 mi (7.2 km) southeast of Mitchell, and 7.3 mi (11.7 km) above mouth.

DRAINAGE AREA.--181 mi² (469 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

REVISED RECORDS.--WDR SD-78-1: 1977.

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft (390 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--7 years, 2.65 ft³/s (0.075 m³/s), 1,920 acre-ft/yr (2.37 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft³/s (39.4 m³/s) Mar. 19, 1978, gage height, 11.27 ft (3.435 m); maximum gage height, 12.54 ft (3.822 m) Mar. 19, 1978 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 106 ft³/s (3.00 m³/s) at 1030 hours, June 1, gage height, 7.05 ft (2.149 m), no other peak above base of 20 ft³/s (0.57 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.20	.07	.00	83	.07	.00	.00
2	.00	.00	.00	.00	.00	.17	.04	.01	58	.08	.00	.00
3	.00	.00	.00	.00	.00	.17	.04	.00	44	.11	.00	.00
4	.00	.00	.00	.00	.00	.17	.02	.00	28	.05	.00	.00
5	.00	.00	.00	.00	.00	.12	.03	.00	19	.01	.00	.00
6	.00	.00	.00	.00	.00	.12	.03	.00	18	.00	.00	.00
7	.00	.00	.00	.00	.00	.11	.03	.00	17	.00	.00	.00
8	.00	.00	.00	.00	.00	.12	.04	.00	13	.00	.00	.00
9	.00	.00	.00	.00	.00	.11	.06	.00	9.8	.00	.00	.00
10	.00	.00	.00	.00	.00	.23	.05	.00	7.5	.00	.00	.00
11	.00	.00	.00	.00	.00	.28	.05	.00	6.2	.00	.00	.00
12	.00	.00	.00	.00	.00	.17	.06	.02	5.3	.00	.00	.00
13	.00	.00	.00	.00	.00	.22	.09	.09	4.7	.00	.00	.00
14	.00	.00	.00	.00	.00	.21	.06	.14	5.0	.00	.00	.00
15	.00	.00	.00	.00	.00	.20	.06	.13	5.2	.08	.00	.00
16	.00	.00	.00	.00	.00	.19	.04	.09	4.7	.09	.00	.00
17	.00	.00	.00	.00	.00	.12	.02	.06	3.9	.01	.00	.00
18	.00	.00	.00	.00	.00	.11	.02	.07	3.9	.00	.00	.00
19	.00	.00	.00	.00	.00	.22	.02	.04	3.5	.00	.00	.00
20	.00	.00	.00	.00	10	.32	.02	.03	2.6	.00	.00	.00
21	.00	.00	.00	.00	4.8	.23	.02	.04	1.9	.00	.00	.00
22	.00	.00	.00	.00	3.1	.20	.04	.03	1.4	.00	.00	.00
23	.00	.00	.00	.00	.71	.15	.05	.04	1.0	.00	.00	.00
24	.00	.00	.00	.00	.45	.12	.03	.04	.68	.00	.00	.00
25	.00	.00	.00	.00	.14	.09	.02	.12	.21	.00	.00	.00
26	.00	.00	.00	.00	.09	.05	.02	.35	.21	.00	.00	.00
27	.00	.00	.00	.00	.12	.08	.00	.27	.16	.00	.00	.00
28	.00	.00	.00	.00	.20	.05	.00	.14	.18	.00	.00	.00
29	.00	.00	.00	.00	---	.07	.00	.10	.15	.00	.00	.00
30	.00	.00	.00	.00	---	.09	.01	.90	.11	.00	.00	.00
31	.00	---	.00	.00	---	.09	---	9.7	---	.00	.00	---
TOTAL	.00	.00	.00	.00	19.61	4.78	1.04	12.41	348.30	.50	.00	.00
MEAN	.000	.000	.000	.000	.70	.15	.035	.40	11.6	.016	.000	.000
MAX	.00	.00	.00	.00	10	.32	.09	9.7	83	.11	.00	.00
MIN	.00	.00	.00	.00	.00	.05	.00	.00	.11	.00	.00	.00
AC-FT	.00	.00	.00	.00	39	9.5	2.1	25	691	1.0	.00	.00

CAL YR 1981 TOTAL 0.07 MEAN .000 MAX .01 MIN .00 AC-FT .10
WTR YR 1982 TOTAL 386.64 MEAN 1.06 MAX 63 MIN .00 AC-FT 767

06478052 ENEMY CREEK NEAR MITCHELL, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Oct. 1, 1981, to Sept. 30, 1982.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: Oct. 1, 1981, to Sept. 30, 1982.

REMARKS.--Records fair. No flow Oct. 1 to Feb. 19, Apr. 27-29, May 1, 3-11, July 6-14, 18-31, Aug. 1 to Sept. 30.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 269 mg/L June 1; minimum daily mean, 0 mg/L on many days.
SEDIMENT LOADS: Maximum daily, 60 tons (54.4 tonnes) June 1; minimum daily, 0 ton (0 tonne) on many days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	0.00	---	0.00	0.00	---	0.00	0.00	---	0.00

06478052 ENEMY CREEK NEAR MITCHELL, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00	0	.00	.00	0	.00	.20	10	.00
2	.00	0	.00	.00	0	.00	.17	9	.00
3	.00	0	.00	.00	0	.00	.17	9	.00
4	.00	0	.00	.00	0	.00	.17	9	.00
5	.00	0	.00	.00	0	.00	.12	8	.00
6	.00	0	.00	.00	0	.00	.12	8	.00
7	.00	0	.00	.00	0	.00	.11	8	.00
8	.00	0	.00	.00	0	.00	.12	8	.00
9	.00	0	.00	.00	0	.00	.11	8	.00
10	.00	0	.00	.00	0	.00	.23	10	.00
11	.00	0	.00	.00	0	.00	.28	11	.00
12	.00	0	.00	.00	0	.00	.17	9	.00
13	.00	0	.00	.00	0	.00	.22	10	.00
14	.00	0	.00	.00	0	.00	.21	10	.00
15	.00	0	.00	.00	0	.00	.20	10	.00
16	.00	0	.00	.00	0	.00	.19	9	.00
17	.00	0	.00	.00	0	.00	.12	8	.00
18	.00	0	.00	.00	0	.00	.11	8	.00
19	.00	0	.00	.00	0	.00	.22	10	.00
20	.00	0	.00	10	49	1.3	.32	12	.01
21	.00	0	.00	4.8	32	.41	.23	10	.00
22	.00	0	.00	3.1	25	.21	.20	10	.00
23	.00	0	.00	.71	15	.03	.15	9	.00
24	.00	0	.00	.45	13	.02	.12	8	.00
25	.00	0	.00	.14	9	.00	.09	7	.00
26	.00	0	.00	.09	7	.00	.05	8	.00
27	.00	0	.00	.12	8	.00	.08	6	.00
28	.00	0	.00	.20	10	.00	.05	4	.00
29	.00	0	.00	---	---	---	.07	6	.00
30	.00	0	.00	---	---	---	.09	7	.00
31	.00	0	.00	---	---	---	.09	7	.00
TOTAL	0.00	---	0.00	19.61	---	1.97	4.78	---	0.01

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	.07	6	.00	.00	0	.00	83	269	60
2	.04	3	.00	.01	1	.00	58	193	30
3	.04	3	.00	.00	0	.00	44	151	18
4	.02	1	.00	.00	0	.00	28	103	7.8
5	.03	3	.00	.00	0	.00	19	76	3.9
6	.03	3	.00	.00	0	.00	18	73	3.5
7	.03	3	.00	.00	0	.00	17	70	3.2
8	.04	3	.00	.00	0	.00	13	58	2.0
9	.06	5	.00	.00	0	.00	9.8	48	1.3
10	.05	4	.00	.00	0	.00	7.5	42	.85
11	.05	4	.00	.00	0	.00	6.2	38	.64
12	.06	5	.00	.02	1	.00	5.3	34	.49
13	.09	7	.00	.09	7	.00	4.7	32	.41
14	.06	5	.00	.14	8	.00	5.0	33	.45
15	.06	5	.00	.13	8	.00	5.2	34	.48
16	.04	3	.00	.09	7	.00	4.7	32	.41
17	.02	1	.00	.06	5	.00	3.9	29	.31
18	.02	1	.00	.07	6	.00	3.9	29	.31
19	.02	1	.00	.04	3	.00	3.5	27	.26
20	.02	1	.00	.03	3	.00	2.6	23	.16
21	.02	1	.00	.04	3	.00	1.9	19	.10
22	.04	3	.00	.03	3	.00	1.4	19	.07
23	.05	4	.00	.04	3	.00	1.0	18	.05
24	.03	3	.00	.04	3	.00	.68	15	.03
25	.02	1	.00	.12	8	.00	.21	10	.00
26	.02	1	.00	.35	12	.01	.21	10	.00
27	.00	0	.00	.27	11	.00	.16	9	.00
28	.00	0	.00	.14	8	.00	.18	8	.00
29	.00	0	.00	.10	8	.00	.15	9	.00
30	.01	1	.00	.90	17	.04	.11	8	.00
31	---	---	---	9.7	48	1.3	---	---	---
TOTAL	1.04	---	0.00	12.41	---	1.35	348.30	---	134.72

06478052 ENEMY CREEK NEAR MITCHELL, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.07	6	.00	.00	0	.00	.00	0	.00
2	.08	6	.00	.00	0	.00	.00	0	.00
3	.11	8	.00	.00	0	.00	.00	0	.00
4	.05	4	.00	.00	0	.00	.00	0	.00
5	.01	1	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.08	6	.00	.00	0	.00	.00	0	.00
16	.09	7	.00	.00	0	.00	.00	0	.00
17	.01	1	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	.00	0	.00	---	---	---
TOTAL	0.50	---	0.00	0.00	---	0.00	0.00	---	0.00

06478053 PIERRE CREEK NEAR ALEXANDRIA, SD

LOCATION.--Lat 43°37'52", long 97°46'00", in SE¼SE¼ sec.15, T.102 N., R.58 W., Hanson County, Hydrologic Unit 10160011, on left bank 5 ft (1.5 m) downstream from county highway bridge, 1.7 mi (2.7 km) southeast of Alexandria, 1.9 mi (3.1 km) upstream from Lake Hanson and 6.5 mi (10.5 km) upstream from mouth.

DRAINAGE AREA.--72.7 mi² (188 km²), approximately.

PERIOD OF RECORD.--October 1981 to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 1,262 ft (385 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 106 ft³/s (3.00 m³/s) at 1700 hours, Feb. 21, gage height, 6.16 ft (1.878 m); minimum daily, 1.5 ft³/s (0.04 m³/s) July 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.7	4.8	2.2	2.5	6.1	3.9	2.5	9.4	2.0	2.0	2.5
2	2.2	2.8	3.8	2.2	2.5	4.6	4.1	2.5	5.0	2.3	1.8	2.2
3	2.5	3.0	4.3	2.2	2.4	3.6	4.0	2.6	4.5	2.4	2.1	2.1
4	2.5	2.9	4.0	2.2	2.4	3.6	3.5	2.6	3.6	1.8	2.1	2.1
5	2.9	2.8	3.5	2.1	2.4	4.3	3.5	2.5	3.1	1.7	2.0	2.1
6	2.9	2.9	3.5	2.1	2.4	3.5	3.5	2.5	3.9	2.0	2.3	2.0
7	2.0	2.9	3.6	2.1	2.5	3.4	3.6	2.3	2.9	2.0	2.2	2.0
8	1.9	2.6	3.4	2.0	2.6	3.3	3.8	2.5	3.3	1.8	2.0	2.1
9	1.8	2.8	3.1	1.9	2.6	3.9	4.5	2.9	3.0	2.0	2.1	2.0
10	2.1	2.8	2.9	1.8	2.6	5.2	4.9	2.8	2.5	1.8	2.2	2.0
11	2.0	2.9	2.9	1.8	2.8	4.7	4.8	2.9	2.4	2.3	2.1	2.0
12	2.1	3.0	3.0	1.8	2.6	5.2	4.7	5.9	2.0	2.2	2.2	2.1
13	5.2	3.0	3.0	1.9	2.9	5.0	4.2	3.9	1.8	2.3	2.1	2.1
14	3.4	3.1	2.8	1.9	3.0	4.8	4.2	4.0	2.9	1.8	2.1	2.0
15	2.6	3.1	2.8	2.0	3.2	4.3	5.1	4.0	2.7	7.8	2.1	2.1
16	2.4	3.0	2.6	2.1	3.2	4.0	4.0	3.1	2.3	3.1	2.0	2.2
17	3.0	3.1	2.5	2.2	4.4	3.8	3.5	2.8	2.3	2.3	2.0	2.2
18	2.5	3.2	2.3	2.3	7.4	3.6	3.2	2.8	2.2	1.8	2.0	2.2
19	2.4	3.4	2.4	2.3	8.6	5.5	3.4	2.5	2.1	1.6	1.9	2.1
20	2.3	3.1	2.5	2.3	29	5.5	3.1	3.0	2.0	1.5	1.8	1.9
21	2.3	3.1	2.8	2.2	74	4.4	3.0	2.8	1.9	2.4	1.8	2.0
22	1.9	3.4	2.7	2.2	67	4.7	2.9	2.6	1.8	1.8	1.9	1.9
23	2.1	4.3	2.4	2.1	21	4.6	2.7	2.4	1.8	2.0	2.1	1.9
24	2.4	3.9	2.3	2.3	10	4.7	2.7	3.4	1.6	2.0	3.4	1.7
25	2.4	3.9	2.3	2.3	7.4	4.1	2.7	5.1	1.8	2.0	2.0	1.9
26	2.6	3.7	2.3	2.5	5.5	3.8	2.6	5.8	1.8	2.1	1.9	2.1
27	2.7	3.5	2.3	2.6	5.9	3.8	2.5	4.2	1.6	1.9	1.9	1.9
28	2.7	3.5	2.2	2.7	6.7	3.9	2.4	3.6	1.6	1.9	1.9	2.0
29	2.8	3.4	2.1	2.7	---	4.2	2.5	3.2	1.7	2.0	2.2	2.0
30	2.8	5.6	2.5	2.6	---	4.8	2.8	23	2.4	1.9	2.4	1.9
31	2.6	---	2.2	2.5	---	4.2	---	27	---	1.9	5.5	---
TOTAL	78.2	97.4	89.8	68.1	289.5	135.1	106.3	143.7	81.9	68.4	68.1	61.3
MEAN	2.52	3.25	2.90	2.20	10.3	4.36	3.54	4.64	2.73	2.21	2.20	2.04
MAX	5.2	5.6	4.8	2.7	74	6.1	5.1	27	9.4	7.8	5.5	2.5
MIN	1.8	2.6	2.1	1.8	2.4	3.3	2.4	2.3	1.6	1.5	1.8	1.7
AC-FT	155	193	178	135	574	268	211	285	162	136	135	122

WTR YR 1982 TOTAL 1287.8 MEAN 3.53 MAX 74 MIN 1.5 AC-FT 2550

06478320 PLUM CREEK NEAR MILLTOWN, SD

LOCATION.--Lat 43°25'05", long 97°46'13", in SE¼SW¼ sec.1, T.99 N., R.59 W., Hutchinson County, Hydrologic Unit 10160011, on right bank 5 ft (2 m) downstream from highway bridge, 0.9 mi (1.4 km) upstream from mouth, and 1.6 mi (2.6 km) southeast of Milltown.

DRAINAGE AREA.--35.4 mi² (91.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1, 1981, to Sept. 30, 1982.

GAGE.--Water-stage recorder. Altitude of gage is 1,194 ft (364 m), from topographic map.

REMARKS.--Record poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 116 ft³/s (3.29 m³/s) at 1410 hours, Feb. 22, gage height, 5.60 ft (1.707 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	6.7	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	2.8	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	42	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	27	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	12	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	15	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	3.8	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	1.7	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.54	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.23	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	10	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	50	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	30	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	16	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.80	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.56	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.33	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	26	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	26	---	.00	.00	---
TOTAL	.00	.00	.00	.00	108.65	.00	.00	52.00	112.84	.00	.00	.00
MEAN	.000	.000	.000	.000	3.88	.000	.000	1.68	3.76	.000	.000	.000
MAX	.00	.00	.00	.00	50	.00	.00	26	42	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

WTR YR 1982 TOTAL 273.49 MEAN .75 MAX 50 MIN .00

06478320 PLUM CREEK NEAR MILLTOWN, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: Oct. 1, 1981, to Sept. 30, 1982.

REMARKS.--Records fair. No flow Oct. 1 to Feb. 18, Feb. 27 to May 29, and June 13 to Sept. 30. Three observations of water temperature and two observations of specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,190 mg/L Feb. 22; minimum daily mean, 0 mg/L on many days.
SEDIMENT LOADS: Maximum daily, 110 tons (99.8 tonnes) Feb. 21; minimum daily, 0 ton (0 tonne) on many days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	0.00	---	0.00	0.00	---	0.00	0.00	---	0.00

06478320 PLUM CREEK NEAR MILLTOWN, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	1.0	10	.03	.00	0	.00
20	.00	0	.00	10	20	.54	.00	0	.00
21	.00	0	.00	50	815	110	.00	0	.00
22	.00	0	.00	30	1190	96	.00	0	.00
23	.00	0	.00	16	600	26	.00	0	.00
24	.00	0	.00	.80	30	.06	.00	0	.00
25	.00	0	.00	.50	20	.03	.00	0	.00
26	.00	0	.00	.35	15	.01	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	---	---	---	.00	0	.00
30	.00	0	.00	---	---	---	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	0.00	---	0.00	108.65	---	232.67	0.00	---	0.00
		APRIL			MAY			JUNE	
1	.00	0	.00	.00	0	.00	8.7	137	3.2
2	.00	0	.00	.00	0	.00	2.6	33	.26
3	.00	0	.00	.00	0	.00	42	40	4.5
4	.00	0	.00	.00	0	.00	27	40	2.9
5	.00	0	.00	.00	0	.00	12	20	.65
6	.00	0	.00	.00	0	.00	13	19	.67
7	.00	0	.00	.00	0	.00	3.8	10	.10
8	.00	0	.00	.00	0	.00	1.7	12	.06
9	.00	0	.00	.00	0	.00	1.0	13	.04
10	.00	0	.00	.00	0	.00	.54	12	.02
11	.00	0	.00	.00	0	.00	.23	9	.00
12	.00	0	.00	.00	0	.00	.07	6	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	28	455	34	.00	0	.00
31	---	---	---	24	511	33	---	---	---
TOTAL	0.00	---	0.00	52.00	---	67.00	112.64	---	12.40

06478320 PLUM CREEK NEAR MILLTOWN, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	.00	0	.00	---	---	---
TOTAL	0.00	---	0.00	0.00	---	0.00	0.00	---	0.00

06478390 WOLF CREEK NEAR CLAYTON, SD

LOCATION.--Lat 43°22'18", long 97°36'12", in NW¼NE¼ sec.29, T.99 N., R.57 W., Hutchinson County, Hydrologic Unit 10160011, on right bank 10 ft (3.0 m) downstream from highway bridge, 4.1 mi (6.6 km) upstream from mouth and 5.6 mi (9.0 km) southeast of Clayton.

DRAINAGE AREA.--386 mi² (1,000 km²), approximately.

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Nonrecording gage Oct. 1-30. Water-stage recorder Oct. 31 to Sept. 30. Altitude of gage is 1,210 ft (369 m), from topographic map. Oct. 1, 1975, to July 29, 1980, recording gage 50 ft (15.2 m) upstream at different datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--6 years, 15.3 ft³/s (0.433 m³/s), 11,080 acre-ft/yr (13.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,280 ft³/s (36.2 m³/s) Mar. 22, 1979, gage height, 11.97 ft (3.648 m); maximum gage height, 12.22 ft (3.725 m) Mar. 19, 1979 (backwater from ice); no flow at times in 1976, 1977, 1980, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft³/s (0.88 m³/s) at 0245 hours, Aug. 27, gage height, 6.19 ft (1.887 m), no peak above base of 175 ft³/s (4.96 m³/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 19-30, Aug. 27 to Sept. 30;
stage-discharge relation affected by ice Nov. 14 to Mar. 10)

4.61	0	4.9	3.0
4.7	.43	5.5	18
4.8	1.2	6.0	34

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.78	.50	.80	.50	3.0	5.0	.41	.00	.00	.00	2.4
2	.00	.74	.50	.80	.50	3.0	4.2	.42	.00	.00	.00	1.2
3	.00	.56	.50	.70	.50	2.9	3.3	.46	.00	5.0	.00	.64
4	.00	.56	.50	.70	.50	2.5	3.8	.68	.00	6.4	.00	.24
5	.00	.59	.80	.60	.50	3.0	3.3	.61	.00	2.8	.00	.07
6	.00	.62	.80	.60	.60	3.0	2.7	.55	.00	1.7	.00	.06
7	.00	.49	.80	.50	.50	2.5	2.3	.44	.00	.69	.00	.29
8	.00	.51	.80	.50	.50	2.5	2.1	.44	.00	.30	.00	.07
9	.00	.47	.70	.50	.50	2.5	2.2	.39	.00	.02	.00	.00
10	.00	.43	.70	.50	.50	2.3	2.2	.31	.00	.00	.00	.00
11	.00	.55	.60	.50	.50	2.1	1.9	.42	.00	.00	.00	.00
12	.00	.63	.70	.60	.50	1.9	1.9	.43	.00	.00	.00	.00
13	.00	.57	.90	.60	.60	2.3	1.7	.69	.00	.00	.00	.00
14	.00	.56	1.0	.50	.70	1.8	1.5	.64	.41	.00	.00	.00
15	.00	.61	2.3	.50	1.0	1.2	1.4	.58	.59	.00	.00	.00
16	.00	.60	2.0	.50	3.0	1.2	1.2	.44	.29	.00	.00	.00
17	.00	.60	1.4	.50	5.0	.97	1.2	.49	.10	.00	.00	.00
18	.00	.60	1.3	.60	4.0	1.1	1.1	.51	.00	.00	.00	.00
19	.86	.65	1.0	.60	2.0	1.1	1.1	.45	.00	.00	.00	.00
20	.70	.60	.80	.60	.80	1.0	1.1	.33	.00	.00	.00	.00
21	.62	.70	.70	.70	.80	.99	.95	.24	.00	.00	.00	.00
22	.46	.60	.70	.80	.70	.98	1.0	.20	.00	.00	.00	.00
23	.54	.60	.70	.90	.80	1.1	1.0	.17	.05	.00	.00	.00
24	.42	.50	.70	1.0	1.0	1.0	.92	.18	.00	.00	.00	.00
25	.34	.50	.70	.90	.90	1.2	.90	.07	.00	.00	.00	.00
26	.26	.50	.70	.90	.80	1.2	.78	.11	.00	.00	.86	.00
27	.50	.60	.70	.80	.80	1.2	.84	.08	.00	.00	27	.00
28	.62	.60	.80	.60	2.0	1.8	.59	.02	.00	.00	20	.00
29	.66	.60	.80	.50	---	5.7	.56	.00	.00	.00	13	.00
30	.70	.60	.90	.50	---	5.7	.42	.00	.00	.00	8.7	.00
31	.86	---	.90	.50	---	4.5	---	.00	---	.00	4.8	---
TOTAL	7.54	17.52	27.10	19.80	31.00	67.24	53.16	10.60	1.44	16.91	74.36	4.97
MEAN	.24	.58	.87	.64	1.11	2.17	1.77	.35	.048	.55	2.40	.17
MAX	.86	.78	2.3	1.0	5.0	5.7	5.0	.69	.59	6.4	27	2.4
MIN	.00	.43	.50	.50	.50	.97	.42	.00	.00	.00	.00	.00
AC-FT	15	35	54	39	61	133	105	21	2.9	34	147	9.9

CAL YR 1980 TOTAL 719.00 MEAN 1.96 MAX 15 MIN .00 AC-FT 1430
WTR YR 1981 TOTAL 351.84 MEAN .91 MAX 27 MIN .00 AC-FT 698

06478390 WOLF CREEK NEAR CLAYTON, SD

LOCATION.--Lat 43°22'18", long 97°36'12", in NW¼NE¼ sec.29, T.99 N., R.57 W., Hutchinson County, Hydrologic Unit 10160011, on right bank 10 ft (3.0 m) downstream from highway bridge, 4.1 mi (6.6 km) upstream from mouth and 5.6 mi (9.0 km) southeast of Clayton.

DRAINAGE AREA.--386 mi^2 (1,000 km^2), approximately.

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder to Sept. 30, 1981. Nonrecording gage Oct. 1-30, 1981. Water-stage recorder Oct. 31, 1981, to current year. Altitude of gage is 1,210 ft (369 m), from topographic map. Oct. 1, 1975, to July 29, 1980, recording gage 50 ft (15.2 m) upstream at different datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--7 years, 14.6 ft^3/s (0.413 m^3/s), 10,580 acre-ft/yr (13.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,280 ft^3/s (36.2 m^3/s) Mar. 22, 1979, gage height, 11.97 ft (3.648 m); maximum gage height, 12.22 ft (3.725 m) Mar. 19, 1979 (backwater from ice), datum then in use; maximum gage height, 13.45 ft (4.100 m) May 30, 1982, present datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 175 ft^3/s (4.96 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 21	--	330	9.35	ice jam		May 30	2100	*1140	32.3	*13.45	4.100

No flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 13; stage-discharge relation affected by ice Dec. 14 to Mar. 9)

4.61	0	4.9	3.0	7.0	86	12.0	793
4.7	.43	5.5	18	8.0	168	13.5	1155
4.8	1.2	6.0	34	10.0	413		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.23	2.3	.00	.00	96	7.6	2.6	156	3.7	.66	5.9
2	.00	.25	2.9	.00	.00	40	7.2	2.6	78	3.8	.49	2.8
3	.00	.24	2.9	.00	.00	15	5.8	2.5	52	5.6	.46	1.3
4	.00	.32	2.8	.00	.00	30	7.3	2.2	37	4.4	.39	.91
5	.00	.25	3.1	.00	.00	40	7.0	1.9	32	2.8	.37	1.0
6	.00	.23	2.3	.00	.00	35	7.2	2.0	42	7.4	.32	1.1
7	.00	.28	2.1	.00	.00	30	6.2	2.1	42	3.2	.31	1.7
8	.00	.31	2.3	.00	.00	25	6.7	1.9	33	2.2	.19	1.5
9	.00	.19	2.1	.00	.00	20	6.7	1.9	28	16	.09	1.0
10	.00	.40	2.6	.00	.00	21	6.9	2.0	24	5.4	.13	1.3
11	.00	.40	1.9	.00	.00	22	6.9	1.7	21	3.8	.09	.70
12	.00	.48	1.8	.00	.00	19	7.5	3.0	19	8.9	.01	1.5
13	5.0	.46	1.8	.00	.00	25	7.9	3.2	17	4.3	.16	1.0
14	2.6	.54	1.5	.00	.00	21	7.8	3.0	16	3.2	.24	.80
15	1.0	.49	1.2	.00	.00	15	7.1	4.2	15	4.9	.36	.70
16	.80	.33	1.0	.00	.00	14	6.5	3.7	14	4.4	.20	.60
17	1.0	.42	1.0	.00	.00	13	6.9	3.7	12	2.8	.16	.80
18	.70	.54	1.0	.00	1.0	12	6.4	3.6	11	2.6	.09	.70
19	.56	.95	1.0	.00	10	11	5.4	2.7	10	2.2	.07	.60
20	.49	.76	1.0	.00	50	12	4.9	2.8	9.5	1.6	2.3	.60
21	.51	.76	1.0	.00	260	12	4.7	3.7	8.9	3.6	1.5	.56
22	.47	.92	1.5	.00	238	11	5.1	3.6	8.2	3.0	.57	.50
23	.44	1.5	1.0	.00	100	11	4.0	2.9	6.9	2.3	.50	.38
24	.43	1.4	.90	.00	50	10	4.7	2.5	6.3	1.7	2.6	.28
25	.33	1.4	.70	.00	40	9.1	4.3	3.3	5.9	1.3	1.8	.24
26	.33	1.3	.50	.00	80	8.4	3.7	8.2	5.2	1.1	1.2	.31
27	.34	1.1	.40	.00	120	8.1	3.7	8.7	4.9	1.1	.35	.25
28	.30	.96	.30	.00	100	7.3	3.5	8.3	4.7	.95	.24	.20
29	.29	.94	.20	.00	---	7.1	3.1	8.1	4.0	.83	.39	.17
30	.29	2.0	.10	.00	---	7.1	2.7	395	4.3	.71	.78	.17
31	.14	---	.05	.00	---	7.5	---	658	---	.69	3.7	---
TOTAL	15.36	20.25	45.25	.00	989.00	608.6	175.4	1155.0	728.8	108.88	20.78	29.57
MEAN	.50	.68	1.46	.000	35.3	19.6	5.85	37.3	24.3	3.51	.67	.99
MAX	5.0	2.0	3.1	.00	238	96	7.9	658	156	16	3.7	5.9
MIN	.00	.19	.05	.00	.00	7.1	2.7	1.7	4.0	.69	.01	.17
AC-FT	30	40	90	.00	1960	1210	348	2290	1450	216	41	59

CAL YR 1981 TOTAL 360.54 MEAN .99 MAX 27 MIN .00 AC-FT 715
WTR YR 1982 TOTAL 3896.89 MEAN 10.7 MAX 658 MIN .00 AC-FT 7730

06478420 LONETREE CREEK AT OLIVET, SD

LOCATION.--Lat 43°13'35", long 97°40'44", in NE¼NE¼ sec.15, T.97 N., R.58 W., Hutchinson County, on right bank 25 ft (7.6 m) upstream from highway bridge, 0.7 mi (1.1 km) upstream from mouth, 0.4 mi (0.6 km) downstream from South Branch Lonetree Creek, and 1.0 mi (1.6 km) southwest of Olivet.

DRAINAGE AREA.--112 mi^2 (290 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1, 1981, to Sept. 30, 1982.

GAGE.--Water-stage recorder. Altitude of gage is 1,180 ft (360 m), from topographic map.

REMARKS.--Records fair except those for winter period, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 267 ft^3/s (7.56 m^3/s) at 2100 hours, May 30, gage height, 8.61 ft (2.624 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	3.0	.00	1.1	119	.91	.00	.72
2	.00	.00	.00	.00	.00	3.0	.00	.88	70	.85	.00	.18
3	.00	.00	.00	.00	.00	3.0	.00	.60	40	.94	.00	.00
4	.00	.00	.49	.00	.00	2.0	.04	.27	24	.67	.00	.00
5	.00	.00	.20	.00	.00	1.5	.00	.27	17	.54	.00	.00
6	.00	.00	.41	.00	.00	1.0	.00	.49	13	.74	.00	.00
7	.00	.00	.34	.00	.00	.50	.06	.27	10	.99	.00	.00
8	.00	.00	.25	.00	.00	.50	.41	.07	8.4	.81	.00	.00
9	.00	.00	.01	.00	.00	.20	1.3	.39	6.6	1.2	.00	.76
10	.00	.00	.01	.00	.00	2.6	2.1	.12	5.2	1.5	.00	4.0
11	.00	.00	.01	.00	.00	3.6	2.9	.00	4.2	1.5	.00	.79
12	.00	.00	.05	.00	.00	3.1	3.4	.26	3.5	1.3	.00	1.3
13	.00	.00	.05	.00	.00	2.6	3.5	.31	3.1	1.1	.00	1.3
14	.00	.00	.00	.00	.00	2.7	2.0	.26	3.1	1.1	.00	.97
15	.00	.00	.00	.00	.00	1.5	1.9	.53	3.2	1.4	.00	.96
16	.00	.00	.00	.00	.00	1.4	1.8	.66	2.6	1.0	.00	.82
17	.00	.00	.00	.00	.00	.93	1.8	.15	2.2	.61	.00	1.1
18	.00	.00	.00	.00	.00	.53	1.7	.00	2.3	.41	.00	1.1
19	.00	.00	.00	.00	.00	.93	1.6	.07	2.0	.86	.00	.57
20	.00	.00	.00	.00	80	1.5	1.8	.07	1.7	.69	.00	.33
21	.00	.00	.00	.00	60	.69	1.5	1.2	1.6	.25	.00	.11
22	.00	.00	.00	.00	40	.67	1.4	1.0	2.0	.07	.00	.00
23	.00	.00	.00	.00	40	.44	1.3	.87	1.6	.00	.00	.00
24	.00	.00	.00	.00	20	.33	1.1	.67	1.2	.00	7.4	.00
25	.00	.00	.00	.00	18	.33	1.0	2.1	1.0	.00	3.2	.00
26	.00	.00	.00	.00	12	.00	1.0	4.7	.82	.00	9.3	.00
27	.00	.00	.00	.00	10	.00	.96	4.9	.59	.00	5.5	.00
28	.00	.00	.00	.00	5.0	.00	1.0	6.8	.44	.00	3.7	.00
29	.00	.00	.00	.00	---	.00	1.1	7.5	.47	.00	3.1	.00
30	.00	.00	.00	.00	---	.00	1.2	68	1.0	.00	2.3	.00
31	.00	---	.00	.00	---	.00	---	200	---	.00	1.4	---
TOTAL	.00	.00	1.82	.00	285.00	38.55	37.81	304.55	351.02	19.44	35.90	15.01
MEAN	.000	.000	.059	.000	10.2	1.24	1.26	9.82	11.7	.63	1.16	.50
MAX	.00	.00	.49	.00	80	3.6	3.5	200	119	1.5	9.3	4.0
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.44	.00	.00	.00
AC-FT	.00	.00	3.6	.00	565	76	75	604	696	39	71	30

WTR YR 1982 TOTAL 1089.10 MEAN 2.99 MAX 200 MIN .00 AC-FT 2160

06478420 LONETREE CREEK AT OLIVET, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: Oct. 1, 1981, to Sept. 30, 1982.

REMARKS.--Records poor. No flow Oct. 1 to Dec. 3, Dec. 14 to Feb. 19, Mar. 26 to Apr. 3, Apr. 5-7, May 11, 18, July 23 to Aug. 23, Sept. 3-8, and Sept. 22-30. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 165 mg/L May 31; minimum daily mean, 0 mg/L on many days.
SEDIMENT LOAD: Maximum daily, 89 tons (81 tonnes) May 31; minimum daily, 0 ton (0 tonne) on many days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.49	10	.01
5	.00	0	.00	.00	0	.00	.20	5	.00
6	.00	0	.00	.00	0	.00	.41	10	.01
7	.00	0	.00	.00	0	.00	.34	10	.00
8	.00	0	.00	.00	0	.00	.25	10	.00
9	.00	0	.00	.00	0	.00	.01	10	.00
10	.00	0	.00	.00	0	.00	.01	10	.00
11	.00	0	.00	.00	0	.00	.01	10	.00
12	.00	0	.00	.00	0	.00	.05	10	.00
13	.00	0	.00	.00	0	.00	.05	10	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	0.00	---	0.00	0.00	---	0.00	1.82	---	0.02

06478420 LONETREE CREEK AT OLIVET, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00	0	.00	.00	0	.00	3.0	40	.32
2	.00	0	.00	.00	0	.00	3.0	40	.32
3	.00	0	.00	.00	0	.00	3.0	40	.32
4	.00	0	.00	.00	0	.00	2.0	38	.21
5	.00	0	.00	.00	0	.00	1.5	37	.15
6	.00	0	.00	.00	0	.00	1.0	35	.09
7	.00	0	.00	.00	0	.00	.50	32	.04
8	.00	0	.00	.00	0	.00	.50	32	.04
9	.00	0	.00	.00	0	.00	.20	29	.02
10	.00	0	.00	.00	0	.00	2.6	105	.74
11	.00	0	.00	.00	0	.00	3.6	109	1.1
12	.00	0	.00	.00	0	.00	3.1	107	.90
13	.00	0	.00	.00	0	.00	2.6	105	.74
14	.00	0	.00	.00	0	.00	2.7	106	.77
15	.00	0	.00	.00	0	.00	1.5	101	.41
16	.00	0	.00	.00	0	.00	1.4	100	.38
17	.00	0	.00	.00	0	.00	.93	95	.24
18	.00	0	.00	.00	0	.00	.53	90	.13
19	.00	0	.00	.00	0	.00	.93	95	.24
20	.00	0	.00	40	55	5.9	1.5	101	.41
21	.00	0	.00	60	58	9.4	.69	92	.17
22	.00	0	.00	80	60	13	.67	92	.17
23	.00	0	.00	40	55	5.9	.64	92	.16
24	.00	0	.00	20	51	2.8	.43	88	.10
25	.00	0	.00	18	50	2.4	.03	73	.00
26	.00	0	.00	12	48	1.6	.00	0	.00
27	.00	0	.00	10	47	1.3	.00	0	.00
28	.00	0	.00	5.0	43	.58	.00	0	.00
29	.00	0	.00	---	---	---	.00	0	.00
30	.00	0	.00	---	---	---	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	0.00	---	0.00	285.00	---	42.88	38.55	---	8.17
		APRIL			MAY			JUNE	
1	.00	0	.00	1.1	97	.29	119	155	50
2	.00	0	.00	.88	94	.22	70	146	28
3	.00	0	.00	.64	92	.16	40	139	15
4	.64	92	.16	.27	83	.06	24	132	8.6
5	.00	0	.00	.27	93	.06	17	127	5.8
6	.00	0	.00	.49	90	.12	13	124	4.4
7	.00	0	.00	.27	83	.06	10	121	3.3
8	.41	87	.10	.07	75	.01	8.4	118	2.7
9	1.3	99	.35	.39	87	.09	6.6	115	2.0
10	2.1	103	.58	.12	78	.03	5.2	113	1.6
11	2.5	105	.71	.00	0	.00	4.2	111	1.3
12	3.4	108	.99	.26	83	.06	3.5	109	1.0
13	3.5	109	1.0	.31	85	.07	3.1	107	.90
14	2.0	103	.56	.26	83	.06	3.1	107	.90
15	1.9	102	.52	.53	90	.13	3.2	108	.93
16	1.8	102	.50	.66	92	.16	2.6	105	.74
17	1.8	102	.50	.15	80	.03	2.2	103	.61
18	1.7	101	.46	.00	0	.00	2.3	104	.65
19	1.6	101	.44	.07	75	.01	2.0	102	.55
20	1.6	101	.44	.47	89	.11	1.7	101	.46
21	1.5	100	.41	1.2	98	.32	1.6	101	.44
22	1.4	100	.38	1.0	97	.26	2.0	103	.56
23	1.3	99	.35	.47	91	.12	1.6	101	.44
24	1.1	97	.29	.67	92	.17	1.2	98	.32
25	1.0	96	.26	2.1	103	.58	1.0	96	.26
26	1.0	96	.26	4.7	112	1.4	.82	94	.21
27	.96	95	.25	4.9	112	1.5	.59	91	.14
28	1.0	96	.26	6.8	116	2.1	.44	88	.10
29	1.1	97	.29	7.5	117	2.4	.57	91	.14
30	1.2	98	.32	68	146	27	1.0	96	.26
31	---	---	---	200	165	89	---	---	---
TOTAL	37.81	---	10.38	304.55	---	126.58	351.92	---	132.31

06478420 LONETREE CREEK AT OLIVET, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.91	95	.23	.00	0	.00	.72	92	.18
2	.85	94	.22	.00	0	.00	.18	81	.04
3	.94	95	.24	.00	0	.00	.00	0	.00
4	.67	92	.17	.00	0	.00	.00	0	.00
5	.54	90	.13	.00	0	.00	.00	0	.00
6	.74	93	.19	.00	0	.00	.00	0	.00
7	.99	95	.25	.00	0	.00	.00	0	.00
8	.81	93	.20	.00	0	.00	.00	0	.00
9	1.2	98	.32	.00	0	.00	.76	93	.19
10	1.5	100	.41	.00	0	.00	4.0	110	1.2
11	1.5	100	.41	.00	0	.00	.79	93	.20
12	1.3	99	.35	.00	0	.00	1.3	99	.35
13	1.1	97	.29	.00	0	.00	1.3	99	.35
14	1.1	97	.29	.00	0	.00	.97	95	.25
15	1.4	100	.38	.00	0	.00	.96	95	.25
16	1.0	96	.26	.00	0	.00	.82	94	.21
17	.61	91	.15	.00	0	.00	1.1	97	.29
18	.41	87	.10	.00	0	.00	1.1	97	.29
19	.86	94	.22	.00	0	.00	.57	91	.14
20	.69	92	.17	.00	0	.00	.33	85	.08
21	.25	83	.06	.00	0	.00	.11	77	.02
22	.07	74	.01	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	7.4	117	2.3	.00	0	.00
25	.00	0	.00	3.2	108	.93	.00	0	.00
26	.00	0	.00	9.3	120	3.0	.00	0	.00
27	.00	0	.00	5.5	113	1.7	.00	0	.00
28	.00	0	.00	3.7	110	1.1	.00	0	.00
29	.00	0	.00	3.1	107	.90	.00	0	.00
30	.00	0	.00	2.3	104	.65	.00	0	.00
31	.00	0	.00	1.4	100	.38	---	---	---
TOTAL	19.44	---	5.05	35.90	---	10.96	15.01	---	4.04

06478500 JAMES RIVER NEAR SCOTLAND, SD

LOCATION.--Lat 43°11'09", long 97°38'07", in SW¼SW¼ sec.30, T.97 N., R.57 W., Hutchinson County, Hydrologic Unit 10160011, on right bank 5.0 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) upstream from Dawson Creek and 5.2 mi (8.4 km) northeast of Scotland.

DRAINAGE AREA.--21,550 mi² (55,810 km²), approximately, of which about 4,790 mi² (12,400 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 956: 1937-38. WSP 1279: 1932, 1948.

GAGE.--Water-stage recorder and rock and earth control. Datum of gage is 1,168.51 ft (356.162 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1972, at site 0.25 mi (0.4 km) downstream at present datum.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 527 mi (848 km) upstream since May 1953. Occasional backwater caused by Dawson Creek; reverse flow occurred for part of May 15, 1961, from information by local residents.

AVERAGE DISCHARGE.--54 years, 366 ft³/s (10.37 m³/s), 265,200 acre-ft/yr (327 hm³/yr); median of yearly mean discharges, 190 ft³/s (5.38 m³/s), 138,000 acre-ft/yr (170 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft³/s (430 m³/s) Apr. 3, 1962, gage height, 18.74 ft (5.712 m); no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,360 ft³/s (66.8 m³/s) June 1, gage height, 11.88 ft (3.621 m); minimum daily discharge, 6.2 ft³/s (0.18 m³/s) Oct. 2 and 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	7.2	21	14	12	250	111	850	2340	315	86	26
2	6.2	7.4	21	14	12	210	123	870	2160	307	83	40
3	6.5	7.2	29	13	12	192	163	875	1900	303	79	44
4	8.6	7.3	25	13	12	137	192	875	1660	293	79	41
5	8.2	9.1	20	12	12	123	184	895	1500	272	81	39
6	8.9	7.2	18	12	12	130	171	904	1370	273	74	39
7	8.0	7.8	17	11	12	120	171	899	1250	270	69	47
8	7.6	10	15	11	12	110	201	918	1120	247	63	51
9	8.4	8.2	14	11	12	111	260	927	1010	274	57	64
10	7.0	9.2	13	11	12	120	388	945	931	282	56	100
11	6.2	9.4	14	11	12	130	575	952	859	232	48	99
12	6.6	9.6	14	11	12	136	705	983	794	201	43	107
13	9.3	8.4	15	10	12	137	783	1000	714	194	39	114
14	11	8.7	16	10	13	137	806	1020	650	182	35	107
15	14	9.4	16	10	14	137	812	1040	640	180	34	111
16	16	8.2	16	11	17	123	822	1050	681	163	33	111
17	21	7.6	16	11	22	104	828	1050	716	139	30	112
18	21	8.7	15	10	27	91	812	1050	785	192	27	116
19	19	13	14	9.8	35	88	795	1080	689	187	24	120
20	20	11	15	9.5	50	98	789	1040	600	151	21	116
21	19	13	14	9.4	150	111	771	1040	526	97	18	115
22	17	15	15	9.4	300	101	753	1050	466	71	17	108
23	15	17	15	9.2	500	107	741	1120	418	185	15	101
24	13	13	16	9.3	420	107	741	1100	393	180	58	100
25	12	13	15	9.4	330	98	747	1060	387	131	45	102
26	9.6	13	16	10	280	96	783	1060	374	109	30	97
27	9.3	11	16	13	285	91	789	1070	356	103	25	84
28	7.9	10	15	12	295	80	795	1070	349	96	18	74
29	7.0	9.8	15	12	---	73	800	1070	339	92	18	77
30	7.4	10	16	12	---	71	828	1250	333	90	18	86
31	7.0	---	15	12	---	96	---	2180	---	89	20	---
TOTAL	346.2	303.4	510	343.0	2894	3715	17439	32253	26264	5900	1343	2548
MEAN	11.2	10.1	16.5	11.1	103	120	581	1040	875	190	43.3	84.9
MAX	21	17	29	14	500	250	828	2180	2340	315	86	120
MIN	6.2	7.2	13	9.2	12	71	111	850	333	71	15	26
AC-FT	687	602	1010	680	5740	7370	34590	63970	52090	11700	2660	5050

CAL YR 1981 TOTAL 5522.89 MEAN 15.1 MAX 80 MIN .47 AC-FT 10950
WTR YR 1982 TOTAL 93858.60 MEAN 257 MAX 2340 MIN 6.2 AC-FT 186200

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-64, 1967-73, 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to Sept. 30, 1981.
WATER TEMPERATURES: January 1953 to September 1969, October 1974 to current year.
SUSPENDED SEDIMENT DISCHARGE: Oct. 1, 1981, to Sept. 30, 1982.

REMARKS.--Prior to October 1969, continuous temperature thermograph at station. Sediment discharge records fair during periods of daily observer samples, poor thereafter.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,660 micromhos Jan. 9, 1977; minimum daily, 300 micromhos Mar. 19, 1977.
WATER TEMPERATURES: Maximum, 32.0°C Aug. 1, 2, 1957; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 30.0°C July 21, 22, Aug. 2; minimum daily, 0.5°C Jan. 19.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 507 mg/L May 31; minimum daily mean, 50 mg/L Mar. 30.
SEDIMENT LOADS: Maximum daily, 2,980 tons (2,700 tonnes) May 31; minimum daily, 1.7 tons (1.5 tonnes) Oct. 2, 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV											
18...	1200	8.8	2000	8.3	8.5	5.8	10.4	K27	150	862	632
JAN											
19...	1300	9.8	2610	7.7	.5	4.0	6.9	<2	190	1376	1026
MAR											
03...	1300	183	800	7.5	2.0	--	11.1	K1400	860	--	--
APR											
14...	1325	810	--	--	10.5	--	--	--	--	--	--
MAY											
12...	1430	985	470	8.0	18.0	34	--	--	--	154	24
JUN											
08...	1615	1120	--	--	22.0	--	--	--	--	--	--
JUL											
14...	1200	179	950	8.2	27.5	25	7.0	K95	580	361	105
AUG											
18...	1400	29	1110	8.1	26.0	33	6.6	500	460	392	130
SEP											
21...	1315	116	--	--	14.5	--	--	--	--	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
NOV											
18...	210	82	140	26	2.1	.7	790	230	75	.5	19
JAN											
19...	320	140	160	20	1.9	24	1300	350	77	.6	19
MAR											
03...	--	--	--	--	--	--	--	--	--	--	--
APR											
14...	--	--	--	--	--	--	--	--	--	--	--
MAY											
12...	37	15	36	31	1.3	13	85	130	19	.2	2.3
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
JUL											
14...	85	36	72	29	1.7	17	230	256	34	.3	6.0
AUG											
18...	86	43	95	34	2.1	14	290	262	46	.3	8.2
SEP											
21...	--	--	--	--	--	--	--	--	--	--	--

< Less than.
K Non-ideal colony count.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)
NOV 18...	1680	1460	2.3	37.9	.62	.190	.24	.89	.030	.070	.21
JAN 19...	2370	2250	3.2	62.7	.45	.560	.70	1.20	.050	.160	.49
MAR 03...	--	--	--	--	.85	.600	.82	2.40	.510	.570	1.7
APR 14...	--	--	--	--	--	--	--	--	--	--	--
MAY 12...	292	286	.40	777	<.10	.590	.76	2.20	<.010	.260	.80
JUN 08...	--	--	--	--	--	--	--	--	--	--	--
JUL 14...	662	635	.90	320	.14	.300	.39	1.90	.060	.110	.34
AUG 18...	788	737	1.1	61.7	<.10	.180	.23	2.60	.060	.140	.43
SEP 21...	--	--	--	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
NOV 18...	1200	4	1	3	<1	--	<1	<10	--	10	<1
JAN 19...	1300	2	0	3	<1	--	<1	10	--	<10	3
JUL 14...	1200	6	2	4	<1	--	<1	10	--	<10	1
AUG 18...	1400	7	2	5	<1	--	<1	<10	--	<10	<1

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
NOV 18...	--	<3	5	3	2	810	33	3	--	<1	590
JAN 19...	2	1	2	--	<1	170	40	3	--	<1	490
JUL 14...	--	<1	6	4	2	1500	3	2	1	1	1500
AUG 18...	--	<1	5	3	2	2100	4	3	--	<1	1900

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
NOV 18...	490	100	.1	--	<.1	<1	--	<1	20	9	11
JAN 19...	50	440	<.1	--	.1	<1	--	1	20	0	30
JUL 14...	400	1100	.4	--	<.1	<1	--	<1	30	20	7
AUG 18...	700	1200	.1	.0	.1	1	0	1	20	10	10

< Less than.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL (UG/L) (39570)
NOV												
18...	1200	--	.0	--	.0	--	.0	--	.0	--	.0	--

DATE	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)
NOV												
18...	--	.0	--	.0	--	--	.0	--	.0	--	.0	--

DATE	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL TRITHION, TOTAL (UG/L) (39790)	PARATHION, TOTAL (UG/L) (39540)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
NOV											
18...	--	.0	--	--	--	--	.0	--	--	--	--

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---		---		---	---	16.0	17.5	24.0	29.0	24.0
2	---	---		---		---	---	18.5	17.5	23.5	30.0	25.0
3	---	---		---		2.0	---	19.5	17.5	26.5	29.5	24.0
4	---	---		---		---	---	19.5	19.0	28.5	28.0	---
5	---	---		---		---	---	17.0	19.0	28.0	19.0	24.0
6	---	---		---		---	---	17.0	21.0	26.0	28.5	23.0
7	---	---		---		---	---	17.5	21.0	26.0	29.0	23.5
8	---	---		---		---	---	17.0	22.0	26.5	28.0	23.5
9	---	---		---		---	---	18.5	19.0	27.0	25.5	23.5
10	---	---		---		---	---	20.5	20.0	26.0	24.0	23.5
11	---	---		---		---	---	18.0	20.5	26.5	23.0	24.0
12	---	---		---		---	---	18.0	21.5	27.0	22.0	21.0
13	---	---		---		---	---	18.0	22.5	26.5	24.0	---
14	---	---		---		---	10.5	19.0	24.0	27.5	24.0	---
15	---	---		---		---	14.5	18.5	22.0	28.0	24.0	---
16	---	---		---		---	12.5	19.5	22.5	29.0	24.5	---
17	---	---		---		---	13.0	19.0	23.0	27.5	27.0	16.5
18	---	8.5		---		---	14.5	19.5	23.0	27.0	26.0	18.0
19	---	---		.5		---	12.0	21.0	22.5	27.0	26.5	18.0
20	---	---		---		---	11.0	21.0	22.5	29.0	27.0	15.5
21	---	---		---		---	11.0	19.0	24.0	30.0	26.0	14.5
22	---	---		---		---	12.0	18.0	24.0	30.0	26.0	16.5
23	---	---		---		---	14.5	19.0	25.0	29.0	29.0	18.5
24	---	---		---		---	15.5	19.0	25.5	29.0	28.0	17.5
25	---	---		---		---	16.0	18.5	24.0	---	25.0	15.0
26	---	---		---		---	14.0	18.0	24.0	28.0	23.0	17.0
27	---	---		---		---	14.5	19.0	26.5	27.0	---	18.0
28	10.5	---		---		---	14.5	20.0	26.5	27.5	20.0	19.0
29	---	---		---		---	14.0	20.0	28.0	28.0	23.0	18.5
30	---	---		---		---	15.0	19.0	23.0	27.0	22.0	16.0
31	---	---		---		---	---	16.0	---	27.0	24.0	---
MEAN	10.5	8.5		.5		2.0	13.5	18.5	22.0	27.5	25.5	20.0

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	8.4	100	2.3	7.2	150	2.9	21	210	12
2	6.2	100	1.7	7.4	150	3.0	21	240	14
3	6.5	100	1.8	7.2	150	2.9	29	300	23
4	8.6	100	2.3	7.3	150	3.0	23	270	17
5	8.2	100	2.2	9.1	150	3.7	20	250	13
6	8.9	100	2.4	7.2	150	2.9	18	240	12
7	8.0	100	2.2	7.8	150	3.2	17	210	9.6
8	7.6	100	2.1	10	150	4.1	15	200	8.1
9	8.4	100	2.3	8.2	150	3.3	14	200	7.6
10	7.0	100	1.9	9.2	150	3.7	13	200	7.0
11	6.2	100	1.7	9.4	150	3.8	14	200	7.6
12	6.6	100	1.8	9.6	150	3.9	14	200	7.6
13	9.4	110	2.8	8.4	150	3.4	15	200	8.1
14	11	130	3.9	8.7	150	3.5	16	200	8.6
15	14	160	6.0	9.4	150	3.8	16	200	8.6
16	16	200	8.6	8.2	150	3.3	16	200	8.6
17	21	200	11	7.6	150	3.1	16	200	8.6
18	21	200	11	8.7	150	3.5	15	200	8.1
19	19	200	10	13	150	5.3	14	200	7.6
20	20	200	11	11	150	4.5	15	200	8.1
21	19	190	9.7	13	150	5.3	14	200	7.6
22	17	160	7.3	15	150	6.1	15	200	8.1
23	15	160	6.5	17	150	6.9	15	200	8.1
24	13	160	5.6	13	150	5.3	16	200	8.6
25	12	160	5.2	13	150	5.3	15	200	8.1
26	9.6	150	3.9	13	150	5.3	16	200	8.6
27	9.3	150	3.8	11	150	4.5	16	200	8.6
28	7.9	150	3.2	10	150	4.1	15	200	8.1
29	7.0	150	2.8	9.8	150	4.0	15	200	8.1
30	7.4	150	3.0	14	180	6.8	16	200	8.6
31	7.0	150	2.8	---	---	---	15	200	8.1
TOTAL	346.2	---	142.8	303.4	---	124.4	510	---	295.4
		JANUARY			FEBRUARY			MARCH	
1	14	200	7.6	12	200	6.5	250	300	202
2	14	200	7.6	12	200	6.5	210	260	147
3	13	200	7.0	12	200	6.5	192	200	104
4	13	200	7.0	12	200	6.5	137	160	59
5	12	200	6.5	12	200	6.5	123	120	40
6	12	200	6.5	12	200	6.5	130	100	35
7	11	200	5.9	12	200	6.5	120	90	29
8	11	200	5.9	12	200	6.5	110	80	24
9	11	200	5.9	12	200	6.5	111	80	24
10	11	200	5.9	12	200	6.5	120	90	29
11	11	200	5.9	12	200	6.5	130	100	35
12	11	200	5.9	12	200	6.5	136	100	37
13	10	200	5.4	12	210	6.8	137	100	37
14	10	200	5.4	13	220	7.7	137	100	37
15	10	200	5.4	14	230	8.7	137	100	37
16	11	200	5.9	17	240	11	123	90	30
17	11	200	5.9	22	250	15	104	80	22
18	10	200	5.4	27	260	19	91	70	17
19	9.8	200	5.3	35	270	26	88	70	17
20	9.5	200	5.1	50	280	38	98	70	19
21	9.4	200	5.1	150	300	121	111	70	21
22	9.4	200	5.1	300	400	324	101	80	22
23	9.2	200	5.0	500	500	675	107	80	23
24	9.3	200	5.0	420	500	567	107	80	23
25	9.4	200	5.1	330	400	356	98	80	21
26	10	200	5.4	280	370	280	96	70	18
27	13	200	7.0	285	370	285	91	70	17
28	12	200	6.5	295	370	295	80	70	15
29	12	200	6.5	---	---	---	73	60	12
30	12	200	6.5	---	---	---	71	50	9.6
31	12	200	6.5	---	---	---	96	60	16
TOTAL	343.0	---	185.1	2894	---	3113.2	3715	---	1178.6

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	111	70	21	850	168	386	2340	376	2380
2	123	80	27	870	160	376	2160	212	1240
3	163	90	40	875	149	352	1900	174	893
4	192	100	52	875	150	354	1660	170	762
5	184	90	45	895	157	379	1500	170	688
6	171	80	37	904	154	376	1370	171	633
7	171	80	37	899	157	381	1250	182	614
8	201	80	43	918	177	439	1120	191	578
9	260	90	63	927	172	430	1010	223	608
10	388	100	105	945	170	434	931	249	626
11	575	110	171	952	164	422	859	229	531
12	705	120	228	963	132	350	798	222	476
13	783	130	275	1000	129	348	714	212	409
14	806	140	305	1020	116	319	650	207	363
15	812	146	320	1040	112	314	640	198	342
16	822	183	406	1050	116	329	681	205	377
17	828	199	445	1050	140	397	716	216	418
18	812	218	478	1050	146	414	745	222	447
19	795	222	477	1040	162	455	689	201	374
20	789	212	452	1040	166	466	600	165	267
21	771	195	406	1060	190	534	526	120	170
22	753	195	396	1050	164	465	460	113	140
23	741	191	382	1120	181	547	418	120	135
24	741	170	340	1100	206	612	393	117	124
25	747	172	347	1060	185	529	387	114	119
26	763	173	366	1060	153	438	374	106	107
27	789	173	369	1070	162	468	356	106	102
28	795	172	369	1070	181	523	349	107	101
29	800	169	365	1070	182	526	339	111	102
30	828	165	369	1250	197	665	333	112	101
31	---	---	---	2180	507	2980	---	---	---
TOTAL	17439	---	7736	32253	---	16008	26264	---	14227

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	315	106	90	56	149	35	26	147	10
2	307	101	88	83	149	33	40	145	16
3	303	88	72	79	149	32	44	143	17
4	293	88	70	79	152	32	41	118	13
5	272	85	62	81	168	37	39	97	10
6	273	77	57	74	180	36	39	97	10
7	270	88	68	69	188	34	47	97	12
8	247	108	72	63	188	31	51	103	14
9	274	104	77	57	176	27	64	105	18
10	282	93	71	56	174	26	100	117	32
11	232	91	57	48	170	22	99	99	26
12	201	89	48	43	166	19	107	80	23
13	198	88	46	39	165	17	114	69	21
14	182	92	45	35	159	15	107	67	19
15	180	92	45	34	153	14	111	65	19
16	163	91	40	33	160	14	111	65	19
17	139	88	33	30	158	12	112	53	16
18	192	88	46	27	157	11	116	55	17
19	187	88	48	24	165	11	120	58	19
20	151	88	34	21	175	9.9	116	72	23
21	97	77	20	18	183	8.9	115	77	24
22	71	70	13	17	183	8.4	108	73	21
23	145	83	41	15	181	7.3	101	75	20
24	180	98	46	58	211	33	100	73	20
25	131	109	39	45	208	25	102	70	19
26	109	109	32	30	199	16	97	67	18
27	103	113	31	25	190	13	84	68	15
28	96	123	32	18	175	8.5	74	69	14
29	92	127	32	18	160	7.8	77	68	14
30	90	147	36	18	156	7.6	86	72	17
31	89	149	36	20	158	8.3	---	---	---
TOTAL	5900	---	1515	1343	---	611.7	2548	---	536

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 18...	1200	8.4	151	3.4	67	--	--	--	74	100	--	--
JAN 19...	1300	9.8	206	5.5	61	--	--	--	65	70	100	--
MAR 03...	1300	183	--	--	--	--	--	--	--	--	--	--
APR 14...	1325	810	144	315	--	--	--	--	--	--	--	--
MAY 12...	1430	985	164	436	93	--	--	--	--	--	--	--
JUN 08...	1615	1120	218	659	--	--	--	--	--	--	--	--
JUL 14...	1200	179	125	60	96	--	--	--	--	--	--	--
AUG 18...	1400	29	275	22	76	--	--	--	--	--	--	--
SEP 21...	1315	116	142	44	98	--	--	--	--	--	--	--

06478513 JAMES RIVER NEAR YANKTON, SD

LOCATION.--Lat 42°59'45", long 97°22'10", in NE¼NW¼ sec.5, T.94 N., R.55 W., Yankton County, Hydrologic Unit 10160011, on left bank at downstream side of highway bridge, 3.9 mi (6.3 km) upstream from Beaver Creek, 17.2 mi (27.7 km) upstream from mouth, and 9 mi (14.5 km) northeast of Yankton.

DRAINAGE AREA.--21,800 mi² (56,460 km²), approximately, of which about 4,790 mi² (12,400 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1, 1981, to Sept. 30, 1982.

GAGE.--Water-stage recorder. Elevation of gage is 1,155 ft (352 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 527 mi (848 km) upstream since May 1953. Occasional backwater caused by Beaver Creek. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,410 ft³/s (68.3 m³/s) at 2015 hours, June 2, gage height, 11.40 ft (3.475 m); minimum daily discharge, 0.78 ft³/s (0.022 m³/s) Oct. 4.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 4 to Nov. 19, May 20-26, June 8-10, Sept. 16-28; stage-discharge relation affected by ice Nov. 20 to Mar. 22)

3.4	0.55	4.0	33	6.0	335	9.0	1120
3.5	2.2	4.5	83	7.0	530	10.0	1600
3.6	5.0	5.0	157	8.0	770	12.0	2800
3.8	18						

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	3.9	15	15	14	400	156	752	2310	394	104	26
2	1.9	3.3	16	16	14	380	189	768	2400	381	98	25
3	1.0	2.9	20	15	14	340	214	779	2390	370	95	25
4	.78	2.5	21	14	14	310	229	785	2250	358	90	30
5	1.8	2.3	23	14	14	270	278	785	2010	350	94	38
6	3.4	2.2	26	12	14	230	297	800	1730	363	90	37
7	4.7	2.1	25	12	14	200	291	812	1510	350	85	35
8	3.7	2.1	22	12	14	190	296	815	1320	340	80	35
9	3.4	2.2	18	12	14	160	306	851	1170	320	71	38
10	5.5	2.4	14	8.0	14	140	346	845	1050	360	66	48
11	4.5	3.1	11	8.0	14	130	427	845	934	350	62	68
12	3.5	3.1	13	8.0	14	140	548	867	872	320	58	91
13	4.9	3.2	13	8.0	14	150	656	896	809	280	57	96
14	8.9	3.6	12	8.0	14	170	729	948	750	260	50	103
15	8.4	4.4	10	9.0	14	170	762	1060	698	250	47	110
16	12	4.3	10	9.0	14	170	768	1030	668	250	42	106
17	12	3.8	10	9.0	14	170	773	1000	678	230	40	110
18	9.6	3.4	10	10	16	160	782	976	706	250	39	110
19	6.3	5.5	12	10	20	150	770	972	712	245	38	110
20	6.7	5.0	15	10	30	140	755	1000	682	245	33	110
21	9.1	3.5	16	10	50	150	748	1100	625	221	29	112
22	10	4.5	16	10	100	175	740	900	560	184	29	110
23	10	7.1	16	10	200	202	728	800	514	133	27	109
24	9.4	9.0	15	10	400	199	715	900	492	147	29	101
25	9.7	7.9	15	10	550	201	712	1000	455	204	30	93
26	7.5	12	15	12	510	197	710	1200	438	160	46	93
27	6.1	9.9	15	15	470	188	725	1160	429	152	47	92
28	5.1	7.9	15	14	410	187	735	1120	416	136	38	89
29	4.6	7.1	15	14	---	178	738	1240	404	124	33	85
30	4.1	9.6	15	14	---	175	748	1600	405	112	30	75
31	4.6	---	15	14	---	158	---	2050	---	107	26	---
TOTAL	185.18	143.8	484	352.0	2994	6170	16871	30676	30387	7946	1695	2310
MEAN	5.97	4.79	15.6	11.4	107	199	562	990	1013	256	54.6	77.0
MAX	12	12	26	16	550	400	782	2050	2400	394	104	112
MIN	.78	2.1	10	8.0	14	130	156	752	404	107	26	25
AC-FT	367	285	960	698	5940	12240	33460	60850	60270	15760	3370	4580

WTR YR 1982 TOTAL 100217.98 MEAN 275 MAX 2400 MIN .78 AC-FT 198800

06478513 JAMES RIVER NEAR YANKTON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: Oct. 1, 1981 to Sept. 30, 1982.

REMARKS.--Records poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 450 mg/L June 1; minimum daily mean, 30 mg/L Dec. 11, 13-18, Jan. 10-15.
SEDIMENT LOADS: Maximum daily, 2,810 tons (2,550 tonnes) June 1; minimum daily, 0.53 ton (0.48 tonne) Oct. 4.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	2.0	220	1.2	3.9	140	1.4	15	100	4.1
2	1.9	290	1.5	3.3	120	1.1	16	110	4.8
3	1.0	280	.76	2.9	100	.78	20	120	6.5
4	.78	250	.53	2.5	120	.81	21	130	7.4
5	1.8	260	1.3	2.3	130	.81	23	140	8.7
6	3.4	260	2.4	2.2	130	.77	26	140	9.8
7	4.7	270	3.4	2.1	130	.74	25	100	6.8
8	3.7	240	2.4	2.1	130	.74	22	80	4.8
9	3.4	220	2.0	2.2	130	.77	18	60	2.9
10	5.5	250	3.7	2.4	130	.84	14	40	1.5
11	4.5	220	2.7	3.1	110	.92	11	30	.89
12	3.5	100	.95	3.1	120	1.0	13	40	1.4
13	4.9	160	2.1	3.2	110	.95	13	30	1.1
14	8.9	200	4.8	3.6	120	1.2	12	30	.97
15	6.4	190	3.3	4.4	130	1.5	10	30	.81
16	12	260	8.4	4.3	110	1.3	10	30	.81
17	12	230	7.5	3.8	90	.92	10	30	.81
18	9.6	190	4.9	3.4	80	.73	10	30	.81
19	6.3	120	2.0	5.5	100	1.5	12	35	1.1
20	6.7	140	2.5	5.0	90	1.2	15	35	1.4
21	9.1	150	3.7	3.5	70	.66	16	35	1.5
22	10	150	4.1	4.5	80	.97	16	35	1.5
23	10	150	4.1	7.1	90	1.7	16	35	1.5
24	9.4	150	3.8	9.0	100	2.4	15	35	1.4
25	9.7	120	3.1	7.9	80	1.7	15	35	1.4
26	7.5	80	1.6	12	100	3.2	15	35	1.4
27	6.1	90	1.5	9.9	90	2.4	15	35	1.4
28	5.1	90	1.2	7.9	80	1.7	15	35	1.4
29	4.5	100	1.2	7.1	80	1.5	15	35	1.4
30	4.1	150	1.7	9.6	90	2.3	15	35	1.4
31	4.6	140	1.7	---	---	---	15	35	1.4
TOTAL	185.18	---	87.08	143.8	---	38.51	484	---	83.10

06478513 JAMES RIVER NEAR YANKTON, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	15	35	1.4	14	45	1.7	400	100	108
2	16	35	1.5	14	45	1.7	380	90	92
3	15	35	1.4	14	45	1.7	340	70	64
4	14	35	1.3	14	45	1.7	310	60	50
5	14	35	1.3	14	45	1.7	270	50	36
6	12	35	1.1	14	45	1.7	230	50	31
7	12	35	1.1	14	45	1.7	200	50	27
8	12	35	1.1	14	45	1.7	180	50	24
9	12	35	1.1	14	45	1.7	160	50	22
10	8.0	30	.65	14	45	1.7	140	50	19
11	8.0	30	.65	14	45	1.7	130	50	18
12	8.0	30	.65	14	45	1.7	140	50	19
13	8.0	30	.65	14	45	1.7	150	55	22
14	8.0	30	.65	14	45	1.7	170	60	28
15	9.0	30	.73	14	45	1.7	170	60	28
16	9.0	35	.85	14	45	1.7	170	60	28
17	9.0	35	.85	14	45	1.7	170	60	28
18	10	35	.95	16	50	2.2	160	55	24
19	10	35	.95	20	60	3.2	150	50	20
20	10	35	.95	30	70	5.7	140	50	19
21	10	35	.95	50	90	12	150	55	22
22	10	35	.95	100	100	27	175	55	26
23	10	35	.95	200	110	59	202	65	35
24	10	35	.95	400	120	130	199	65	35
25	10	35	.95	550	130	193	201	65	35
26	12	40	1.3	510	120	165	197	60	32
27	15	45	1.8	470	110	140	188	50	25
28	14	45	1.7	410	100	111	187	50	25
29	14	45	1.7	---	---	---	178	50	24
30	14	45	1.7	---	---	---	175	50	24
31	14	45	1.7	---	---	---	158	50	21
TOTAL	352.0	---	34.48	2994	---	877.0	6170	---	1011
		APRIL			MAY			JUNE	
1	156	50	21	752	170	345	2310	450	2810
2	189	55	28	768	170	353	2400	350	2270
3	214	55	32	779	170	358	2390	300	1940
4	229	60	37	785	180	382	2250	200	1220
5	278	60	45	765	180	372	2010	200	1090
6	297	65	52	800	180	389	1730	200	934
7	291	65	51	812	180	395	1510	200	815
8	296	65	52	815	190	418	1320	190	677
9	306	70	58	851	190	437	1170	250	790
10	346	70	65	845	190	433	1050	350	992
11	427	70	81	845	190	433	944	350	892
12	548	75	111	887	200	479	872	350	824
13	656	75	133	846	200	457	809	350	765
14	729	80	157	948	200	512	750	350	709
15	762	85	175	1060	200	572	698	350	660
16	768	90	187	1030	200	556	668	340	613
17	773	90	188	1000	200	540	678	340	622
18	782	100	211	976	200	527	708	400	765
19	770	100	208	972	200	525	712	400	769
20	755	100	204	1010	200	540	682	380	700
21	748	100	202	1100	200	594	625	340	574
22	740	110	220	900	200	486	560	340	514
23	728	110	216	860	200	432	514	340	472
24	715	110	212	910	220	535	482	340	442
25	712	110	211	1000	200	540	453	340	416
26	710	120	230	1200	180	583	438	330	390
27	725	130	254	1160	170	532	429	330	382
28	735	140	278	1120	170	514	416	330	371
29	738	150	299	1240	170	569	404	330	360
30	748	160	323	1600	280	1210	405	320	350
31	---	---	---	2050	380	2100	---	---	---
TOTAL	16871	---	4541	30674	---	17155	30367	---	25128

06478513 JAMES RIVER NEAR YANKTON, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	394	320	340	104	200	56	26	150	11
2	381	320	329	98	200	53	25	150	10
3	370	320	320	95	200	51	25	150	10
4	358	320	309	90	200	49	30	160	13
5	350	320	302	94	200	51	38	170	17
6	363	360	353	90	200	49	37	200	20
7	350	320	302	85	200	46	35	190	18
8	340	320	294	80	200	43	35	180	17
9	320	320	276	71	200	38	38	180	18
10	340	350	321	66	200	36	48	190	25
11	350	400	378	62	200	33	68	200	37
12	320	370	320	58	200	31	91	270	66
13	280	360	272	57	200	31	96	280	73
14	260	350	246	50	200	27	103	290	81
15	250	340	229	47	200	25	110	300	89
16	250	330	223	42	200	23	106	300	86
17	230	320	199	40	200	22	110	300	89
18	250	330	223	39	200	21	110	300	89
19	245	340	225	38	200	21	110	300	89
20	245	180	119	33	200	18	110	300	89
21	221	160	95	29	200	16	112	290	88
22	184	150	75	29	200	16	110	280	83
23	133	150	54	27	200	15	109	270	79
24	147	300	119	29	200	16	101	260	71
25	204	270	149	30	200	16	93	250	63
26	180	250	121	46	300	37	93	240	60
27	152	220	90	47	290	37	92	230	57
28	136	200	73	34	230	21	89	220	53
29	124	200	67	33	200	18	85	210	48
30	112	200	60	30	170	14	75	200	40
31	107	200	58	26	150	11	---	---	---
TOTAL	7946	---	6541	1699	---	941	2310	---	1589

06478514 BEAVER CREEK NEAR YANKTON, SD

LOCATION.--Lat 42°57'32", long 94°21'40", in NE¼SE¼ sec.17, T.97 N., R.55 W., Yankton County, Hydrologic Unit 10160011, on right bank 30 ft (9.1 m) downstream from highway bridge, 6.8 mi (10.9 km) northeast of Yankton, 8.9 mi (14.3 km) downstream from Beaver Lake, and 1.2 mi (1.9 km) upstream from mouth.

DRAINAGE AREA.--144 mi² (373 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1, 1981, to Sept. 30, 1982.

GAGE.--Water-stage recorder. Datum of gage is 1,165 ft (355.1 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,110 ft³/s (31.4 m³/s) at 2245 hours, May 20, gage height, 11.11 ft (3.386 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.10	.00	.00	.00	.94	.10	.02	352	.02	.00	.00
2	.00	.11	.00	.00	.00	.32	.10	.02	200	.02	.01	.00
3	.00	.10	.00	.00	.00	.22	2.4	.02	139	.02	.02	.00
4	.00	.10	.00	.00	.00	.18	.60	.02	112	.02	.02	.00
5	.00	.10	.00	.00	.00	.10	.50	.05	80	.01	.02	.00
6	.00	.10	.00	.00	.00	.10	.30	.02	55	.01	.01	.00
7	.00	.11	.00	.00	.00	.10	.20	.04	36	.01	.00	.02
8	.00	.10	.00	.00	.00	.10	.10	.03	23	.01	.00	.02
9	.00	.11	.00	.00	.00	.10	.40	.05	18	.01	.00	.03
10	.02	.12	.00	.00	.00	.10	.72	.03	7.3	.01	.01	.02
11	.01	.11	.00	.00	.00	.10	.10	.05	5.2	.02	.00	.02
12	.01	.12	.00	.00	.00	.10	.10	.14	3.5	.02	.00	.03
13	.01	.12	.00	.00	.00	.10	.10	5.8	2.0	.08	.00	.04
14	.03	.12	.00	.00	.00	.10	.10	1.8	2.7	.01	.00	.03
15	.03	.13	.00	.00	.00	.10	.40	23	3.3	.01	.00	.04
16	.03	.13	.00	.00	.00	.10	.20	20	1.7	.01	.00	.03
17	.04	.13	.00	.00	.00	.10	.10	5.0	.91	.01	.00	.03
18	.04	.13	.00	.00	.00	.10	.05	1.0	.90	.01	.00	.03
19	.04	.01	.00	.00	.01	.10	.03	.14	.60	18	.00	.03
20	.06	.00	.00	.00	.05	.24	.02	333	.40	20	.01	.03
21	.05	.00	.00	.00	.10	2.3	.03	703	.27	16	.01	.04
22	.06	.00	.00	.00	50	.68	.05	232	.12	5.0	.01	.03
23	.07	.00	.00	.00	20	.42	.02	121	.06	.87	.02	.02
24	.07	.00	.00	.00	10	.24	.02	107	.04	.15	.49	.02
25	.08	.00	.00	.00	5.0	.10	.02	76	.03	.00	.00	.02
26	.08	.00	.00	.00	5.0	.10	.02	103	.03	.00	.00	.01
27	.08	.00	.00	.00	3.3	.10	.02	77	.02	.00	.00	.00
28	.08	.00	.00	.00	1.7	.10	.02	46	.02	.00	.00	.01
29	.09	.00	.00	.00	---	.10	.02	132	.02	.00	.00	.00
30	.09	.00	.00	.00	---	.10	.05	523	.03	.00	.00	.00
31	.09	---	.00	.00	---	.10	---	603	---	.00	.00	---
TOTAL	1.16	2.05	.00	.00	95.16	7.74	6.89	3113.23	1044.15	60.33	.63	.55
MEAN	.037	.068	.000	.000	3.40	.25	.23	100	34.8	1.95	.020	.018
MAX	.09	.13	.00	.00	50	2.3	2.4	703	352	20	.49	.04
MIN	.00	.00	.00	.00	.00	.10	.02	.02	.02	.00	.00	.00
AC-FT	2.3	4.1	.00	.00	189	15	14	6180	2070	120	1.2	1.1

WTR YR 1982 TOTAL 4331.89 MEAN 11.9 MAX 703 MIN .00 AC-FT 8590

06478514 BEAVER CREEK NEAR YANKTON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Oct. 1, 1981, to Sept. 30, 1982.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE.--Oct. 1, 1981, to Sept. 30, 1982.

REMARKS.--Records poor. No flow Oct. 1-9, Nov. 20 to Feb. 18, July 25 to Aug. 1, Aug. 7-9, 11-19, Aug. 25 to Sept. 6, Sept. 27, 29, 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,100 mg/L May 21; minimum daily mean, 0 mg/L on many days.
SEDIMENT LOADS: Maximum daily, 3,990 tons (3,620 tonnes) May 21; minimum daily, 0 ton (0 tonne) on many days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.10	10	.00	.00	0	.00
2	.00	0	.00	.11	10	.00	.00	0	.00
3	.00	0	.00	.10	10	.00	.00	0	.00
4	.00	0	.00	.10	10	.00	.00	0	.00
5	.00	0	.00	.10	10	.00	.00	0	.00
6	.00	0	.00	.10	10	.00	.00	0	.00
7	.00	0	.00	.11	10	.00	.00	0	.00
8	.00	0	.00	.10	10	.00	.00	0	.00
9	.00	0	.00	.11	10	.00	.00	0	.00
10	.02	10	.00	.12	10	.00	.00	0	.00
11	.01	10	.00	.11	10	.00	.00	0	.00
12	.01	10	.00	.12	10	.00	.00	0	.00
13	.01	10	.00	.12	10	.00	.00	0	.00
14	.03	10	.00	.12	10	.00	.00	0	.00
15	.03	10	.00	.13	10	.00	.00	0	.00
16	.03	10	.00	.13	10	.00	.00	0	.00
17	.04	10	.00	.13	10	.00	.00	0	.00
18	.04	10	.00	.13	10	.00	.00	0	.00
19	.04	10	.00	.01	10	.00	.00	0	.00
20	.06	10	.00	.00	0	.00	.00	0	.00
21	.05	10	.00	.00	0	.00	.00	0	.00
22	.06	10	.00	.00	0	.00	.00	0	.00
23	.07	10	.00	.00	0	.00	.00	0	.00
24	.07	10	.00	.00	0	.00	.00	0	.00
25	.08	10	.00	.00	0	.00	.00	0	.00
26	.08	10	.00	.00	0	.00	.00	0	.00
27	.08	10	.00	.00	0	.00	.00	0	.00
28	.08	10	.00	.00	0	.00	.00	0	.00
29	.09	10	.00	.00	0	.00	.00	0	.00
30	.09	10	.00	.00	0	.00	.00	0	.00
31	.09	10	.00	---	---	---	.00	0	.00
TOTAL	1.16	---	0.00	2.05	---	0.00	0.00	---	0.00

06478514 BEAVER CREEK NEAR YANKTON, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00	0	.00	.00	0	.00	.94	25	.06
2	.00	0	.00	.00	0	.00	.32	25	.02
3	.00	0	.00	.00	0	.00	.22	25	.01
4	.00	0	.00	.00	0	.00	.10	25	.00
5	.00	0	.00	.00	0	.00	.10	25	.00
6	.00	0	.00	.00	0	.00	.10	25	.00
7	.00	0	.00	.00	0	.00	.10	25	.00
8	.00	0	.00	.00	0	.00	.10	25	.00
9	.00	0	.00	.00	0	.00	.10	25	.00
10	.00	0	.00	.00	0	.00	.10	25	.00
11	.00	0	.00	.00	0	.00	.10	25	.00
12	.00	0	.00	.00	0	.00	.10	25	.00
13	.00	0	.00	.00	0	.00	.10	25	.00
14	.00	0	.00	.00	0	.00	.10	25	.00
15	.00	0	.00	.00	0	.00	.10	25	.00
16	.00	0	.00	.00	0	.00	.10	25	.00
17	.00	0	.00	.00	0	.00	.10	25	.00
18	.00	0	.00	.00	0	.00	.10	30	.00
19	.00	0	.00	.01	9	.00	.18	30	.01
20	.00	0	.00	.05	9	.00	.24	200	.13
21	.00	0	.00	.10	9	.00	2.3	300	1.9
22	.00	0	.00	50	150	20	.68	200	.37
23	.00	0	.00	20	100	5.4	.42	100	.11
24	.00	0	.00	10	50	1.4	.24	60	.04
25	.00	0	.00	5.0	40	.54	.10	50	.01
26	.00	0	.00	5.0	30	.41	.10	50	.01
27	.00	0	.00	3.3	30	.27	.10	50	.01
28	.00	0	.00	1.7	25	.11	.10	50	.01
29	.00	0	.00	---	---	---	.10	50	.01
30	.00	0	.00	---	---	---	.10	50	.01
31	.00	0	.00	---	---	---	.10	50	.01
TOTAL	0.00	---	0.00	95.16	---	28.13	7.74	---	2.72
		APRIL			MAY			JUNE	
1	.10	50	.01	.02	10	.00	352	1000	950
2	.10	100	.03	.02	10	.00	200	600	324
3	2.4	90	.58	.02	10	.00	139	400	150
4	.60	70	.11	.02	10	.00	112	300	91
5	.50	50	.07	.05	10	.00	80	200	43
6	.30	50	.04	.02	10	.00	55	200	30
7	.20	50	.03	.04	10	.00	36	200	19
8	.10	50	.01	.03	10	.00	23	150	9.3
9	.40	70	.08	.05	10	.00	18	150	7.3
10	.72	90	.17	.03	10	.00	7.3	100	2.0
11	.10	70	.02	.05	10	.00	5.2	100	1.4
12	.10	50	.01	.14	20	.00	3.5	100	.95
13	.10	50	.01	5.8	400	6.3	2.0	100	.54
14	.10	50	.01	1.8	300	1.5	2.7	300	2.2
15	.40	70	.08	23	700	43	3.3	500	4.5
16	.20	40	.02	20	500	27	1.7	400	1.8
17	.10	30	.00	5.0	100	1.4	.91	350	.86
18	.05	20	.00	1.0	100	.27	.90	300	.73
19	.03	10	.00	.14	200	.08	.60	250	.41
20	.02	10	.00	333	700	629	.40	200	.22
21	.03	10	.00	703	2100	3990	.27	150	.11
22	.05	10	.00	232	1500	940	.12	100	.03
23	.02	10	.00	121	600	196	.06	50	.00
24	.02	10	.00	107	400	116	.04	30	.00
25	.02	10	.00	76	250	51	.03	10	.00
26	.02	10	.00	103	350	97	.03	10	.00
27	.02	10	.00	77	200	42	.02	10	.00
28	.02	10	.00	46	150	19	.02	10	.00
29	.02	10	.00	132	600	214	.02	10	.00
30	.05	10	.00	523	1000	1410	.03	10	.00
31	---	---	---	603	2000	3260	---	---	---
TOTAL	6.89	---	1.28	3113.23	---	11043.55	1044.15	---	1639.35

06478514 BEAVER CREEK NEAR YANKTON, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.02	10	.00	.00	0	.00	.00	0	.00
2	.02	10	.00	.01	10	.00	.00	0	.00
3	.02	10	.00	.02	10	.00	.00	0	.00
4	.02	10	.00	.02	10	.00	.00	0	.00
5	.01	10	.00	.02	10	.00	.00	0	.00
6	.01	10	.00	.01	10	.00	.00	0	.00
7	.01	10	.00	.00	0	.00	.02	10	.00
8	.01	10	.00	.00	0	.00	.02	10	.00
9	.01	10	.00	.00	0	.00	.03	10	.00
10	.01	10	.00	.01	10	.00	.02	10	.00
11	.02	10	.00	.00	0	.00	.02	10	.00
12	.02	10	.00	.00	0	.00	.03	10	.00
13	.08	10	.00	.00	0	.00	.04	10	.00
14	.01	10	.00	.00	0	.00	.03	10	.00
15	.01	10	.00	.00	0	.00	.04	10	.00
16	.01	10	.00	.00	0	.00	.03	10	.00
17	.01	10	.00	.00	0	.00	.03	10	.00
18	.01	10	.00	.00	0	.00	.03	10	.00
19	18	100	4.9	.00	0	.00	.03	10	.00
20	20	400	22	.01	10	.00	.03	10	.00
21	16	200	8.6	.01	10	.00	.04	10	.00
22	5.0	100	1.4	.01	10	.00	.03	10	.00
23	.87	40	.09	.02	10	.00	.02	10	.00
24	.15	10	.00	.49	20	.03	.02	10	.00
25	.00	0	.00	.00	0	.00	.02	10	.00
26	.00	0	.00	.00	0	.00	.01	10	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.01	10	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	.00	0	.00	---	---	---
TOTAL	60.33	---	36.99	0.63	---	0.03	0.55	---	0.00

MISSOURI RIVER MAIN STEM

06478515 MISSOURI RIVER NEAR GAYVILLE, SD

STAGE RECORDS

LOCATION.--Lat 42°51'01", long 97°13'12", in SW¼NW¼ sec.27, T.93 N., R.54 W., Yankton County, Hydrologic Unit 10170101, 3.8 mi (6.1 km) southwest of Gayville, 4.1 mi (6.6 km) downstream from James River and at mile 796.0 (1,280.8 km).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft (335.280 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Stage regulated by Lewis and Clark Lake 15.0 mi (24.1 km) upstream (see station 06467000). Gage heights for period of October 1969 to September 1980 in files of Corps of Engineers.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49.76		---			---	48.96	49.37	48.06	48.98	49.09	49.20
2	49.80		---			---	49.03	49.37	48.25	48.95	49.13	49.19
3	49.81		---			---	48.95	49.39	48.26	48.93	49.12	49.19
4	49.76		---			---	49.02	49.42	48.49	48.97	49.11	49.20
5	49.76		---			---	49.06	49.36	48.63	48.98	49.16	49.20
6	49.76		---			---	49.18	49.35	48.71	48.96	49.09	49.22
7	49.75		---			---	49.23	49.32	48.69	48.99	49.03	49.28
8	49.78		---			---	49.29	49.31	48.68	48.89	49.01	49.31
9	49.72		47.04			---	49.29	49.39	48.64	48.87	49.03	49.33
10	49.72		---			---	49.29	49.34	48.63	48.91	49.09	49.32
11	49.76		---			---	49.34	49.29	48.58	48.95	49.09	49.31
12	49.79		---			---	49.41	49.30	48.40	48.91	49.04	49.30
13	49.78		---			---	49.47	49.15	48.40	48.90	49.04	49.28
14	49.76		---			---	49.55	49.08	48.52	48.99	49.04	49.22
15	49.78		---			---	49.63	49.09	48.51	49.02	49.03	49.23
16	49.79		47.02			---	49.56	49.10	48.37	49.02	49.05	49.23
17	49.78		47.15			---	49.44	49.05	48.37	49.01	49.06	49.23
18	49.73		47.24			47.41	49.59	48.95	48.56	49.00	49.08	49.26
19	49.76		47.18			47.70	49.50	48.96	48.75	49.03	49.07	49.28
20	49.75		47.33			47.93	49.47	48.82	48.80	49.06	49.07	49.29
21	49.72		47.07			47.95	49.48	48.77	48.81	49.01	49.12	49.39
22	49.70		47.04			48.10	49.48	48.41	48.88	48.98	49.15	49.47
23	49.71		47.00			48.21	49.49	48.65	48.95	48.94	49.17	49.50
24	49.73		46.95			48.29	49.48	48.70	48.97	48.94	49.22	49.48
25	49.70		47.03			48.38	49.42	48.75	48.97	48.93	49.22	49.49
26	49.73		47.08			48.50	49.37	48.73	48.97	48.95	49.23	49.50
27	49.73		47.05			48.65	49.37	48.57	48.96	48.97	49.21	49.50
28	49.77		47.01			48.76	49.42	48.36	48.96	49.03	49.23	49.56
29	49.88		---			48.86	49.42	48.30	48.99	49.04	49.26	49.51
30	---		---			49.01	49.40	48.09	48.08	49.06	49.25	49.49
31	---		---			48.91	---	47.94	---	49.08	49.24	---
TOTAL	---		---			---	1480.61	1517.75	1459.74	1518.29	1522.73	1479.96
MEAN	---		---			---	49.35	48.96	48.66	48.98	49.12	49.33
MAX	---		---			---	49.63	49.42	48.99	49.08	49.26	49.56
MIN	---		---			---	48.95	47.94	48.06	48.87	49.01	49.19

06478515 MISSOURI RIVER NEAR GAYVILLE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
SUSPENDED SEDIMENT: October 1979 to October 1981 (discontinued).
BED MATERIAL: October 1979 to October 1981 (discontinued).

REMARKS.--Flow regulated by Lewis and Clark Lake 15.0 mi (24.1 km) upstream (see station 06467000). Samples collected 8.5 mi (13.7 km) downstream from gage. Several water-discharge measurements, and observations of water temperature and specific conductance were made during the year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAM-PLING DEPTH (FEET) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
20...	1245	80.0	2.90	12.6	4.25	90	37	37	41	73	92	100
20...	1248	80.0	6.30	12.6	3.86	109	37	37	46	65	100	--
20...	1252	80.0	9.00	12.6	3.64	240	37	39	45	67	100	--
20...	1255	80.0	10.5	12.6	2.90	492	37	38	43	63	100	--
20...	1258	80.0	11.3	12.6	2.90	623	37	37	45	65	99	100
20...	1301	240	2.10	9.00	4.10	90	56	60	66	93	100	--
20...	1304	240	4.50	9.00	4.14	110	57	57	61	86	100	--
20...	1307	240	6.40	9.00	3.22	154	35	35	42	66	100	--
20...	1310	240	7.50	9.00	3.31	200	27	28	36	56	100	--
20...	1313	240	8.10	9.00	2.46	824	7	7	10	18	64	100
20...	1316	480	1.90	8.00	3.94	81	60	61	75	91	97	100
20...	1319	480	4.00	8.00	3.66	100	42	42	50	91	97	100
20...	1322	480	5.70	8.00	3.16	110	29	29	37	70	100	--
20...	1325	480	6.70	8.00	3.14	147	29	29	36	75	100	--
20...	1328	480	7.20	8.00	2.86	169	30	31	38	69	100	--
20...	1331	710	2.20	9.50	3.84	59	82	85	87	97	100	--
20...	1334	710	4.70	9.50	3.53	61	67	74	80	98	100	--
20...	1337	710	6.70	9.50	3.03	72	66	70	80	95	100	--
20...	1340	710	7.80	9.50	2.96	152	31	31	41	62	98	100
20...	1343	710	8.50	9.50	2.59	249	21	21	22	40	93	100
20...	1346	840	4.90	21.4	3.29	50	93	96	100	--	--	--
20...	1349	840	10.7	21.4	3.22	62	92	97	100	--	--	--
20...	1352	840	15.3	21.4	3.09	67	85	92	100	--	--	--
20...	1355	840	17.8	21.4	2.90	52	91	91	98	100	--	--
20...	1358	840	19.3	21.4	2.48	80	70	75	93	97	100	--
20...	1401	840	20.1	21.4	2.42	79	76	76	90	96	100	--
20...	1404	840	20.6	21.4	2.55	72	51	60	75	91	100	--

PARTICLE-SIZE OF BED MATERIAL, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT											
20...	1407	80.0	--	16	91	99	100	--	--	--	--
20...	1410	240	--	7	51	77	78	91	97	100	--
20...	1413	480	--	7	67	100	90	96	98	100	--
20...	1416	710	1	8	40	83	88	93	95	97	100
20...	1419	840	--	9	47	60	84	94	99	100	--

06478526 MISSOURI RIVER NEAR MASKELL, NE

WATER-QUALITY RECORDS

LOCATION.--Lat 42°43'02", long 96°57'20", in NW¼SW¼ sec.27, T.32 N., R.4 E., Dixon County, Hydrologic Unit 10170101, 2.3 mi (3.7 km) northeast of Maskell, 24.3 mi (39.1 km) downstream from James River, 3.8 mi (6.1 km) upstream from Vermillion River and at mile 775.8 (1,248.3 km).

PERIOD OF DAILY RECORD.--
STAGE: September 1967 to current year.

PERIOD OF RECORD.--
SUSPENDED SEDIMENT: October 1979 to October 1981 (discontinued).
BED MATERIAL: October 1979 to October 1981 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft (335.280 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Flow regulated by Lewis and Clark Lake 33.2 mi (56.6 km) upstream (see station 06467000). Gage heights only in files of Corps of Engineers for period September 1967 to September 1982. Several water-discharge measurements, and observations of water temperature and specific conductance were made during the year.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAM-PLING DEPTH (FEET) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
21...	1545	300	1.90	6.30	4.18	168	26	26	46	85	100	--
21...	1548	300	4.10	6.30	3.88	270	20	23	34	76	100	--
21...	1551	300	5.90	6.30	3.49	324	20	24	34	76	100	--
21...	1554	300	6.80	6.30	2.79	437	20	24	35	77	100	--
21...	1557	300	7.40	6.30	.87	536	20	24	33	75	100	--
21...	1600	435	4.10	17.8	4.99	127	41	53	63	90	100	--
21...	1603	435	8.90	17.8	4.38	178	29	42	57	89	100	--
21...	1606	435	12.7	17.8	3.75	253	20	26	43	74	96	100
21...	1609	435	14.8	17.8	3.57	436	12	--	--	--	--	--
21...	1612	435	16.0	17.8	3.14	513	8	10	21	47	97	100
21...	1615	435	16.8	17.8	2.96	666	6	14	22	49	99	100
21...	1618	510	4.80	20.7	5.34	160	42	78	89	98	100	--
21...	1621	510	10.3	20.7	5.03	166	41	41	54	90	100	--
21...	1624	510	14.7	20.7	4.34	222	29	35	50	75	100	--
21...	1627	510	17.2	20.7	3.29	287	21	21	47	73	100	--
21...	1630	510	18.5	20.7	3.16	326	19	28	40	67	100	--
21...	1633	510	19.4	20.7	2.77	432	11	14	25	53	96	100
21...	1636	570	5.00	21.8	5.91	89	57	81	90	99	100	--
21...	1639	570	10.9	21.8	5.38	105	44	68	86	95	100	--
21...	1642	570	15.6	21.8	3.88	135	37	40	52	90	100	--
21...	1645	570	18.2	21.8	2.77	194	24	34	46	80	100	--
21...	1648	570	19.6	21.8	2.20	234	22	32	43	74	100	--
21...	1651	570	20.5	21.8	1.96	286	20	27	35	75	100	--
21...	1654	570	21.0	21.8	1.70	361	16	24	35	75	100	--
21...	1657	700	1.90	8.20	5.34	119	62	63	84	100	--	--
21...	1700	700	4.10	8.20	5.34	129	52	63	80	100	--	--
21...	1703	700	5.90	8.20	4.90	152	37	68	82	100	--	--
21...	1706	700	6.80	8.20	4.82	170	36	63	73	100	--	--

PARTICLE-SIZE OF BED MATERIAL, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT											
21...	1709	300	--	35	97	100	--	--	--	--	--
21...	1712	435	1	11	92	100	100	--	--	--	--
21...	1715	510	--	6	68	100	100	--	--	--	--
21...	1718	570	1	16	75	88	95	98	100	--	--
21...	1721	700	1	9	55	76	76	81	96	100	--

06478540 LITTLE VERMILLION RIVER NEAR SALEM, SD
(Hydrologic bench-mark station)

LOCATION.--Lat 43°47'39", long 97°22'02", in SW¼ sec.19, T.104 N., R.54 W., McCook County, Hydrologic Unit 10170102, on right wingwall at downstream end of culvert on county highway, 2.0 mi (3.2 km) upstream from small left-bank tributary and 5.2 mi (8.4 km) northeast of Salem.

DRAINAGE AREA.--51.0 mi^2 (132 km^2), approximately.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder and concrete dam.

REMARKS.--Records fair except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--16 years, 2.11 ft^3/s (0.060 m^3/s), 1,530 acre-ft/yr (1.89 hm^3/yr); median of yearly mean discharges, 1.3 ft^3/s (0.04 m^3/s), 940 acre-ft/yr (1.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 676 ft^3/s (19.1 m^3/s) Mar. 21, 1978, gage height, 7.79 ft (2.374 m); maximum gage height, 8.53 ft (2.600 m) Apr. 5, 1969 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10 ft^3/s (0.28 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 24	--	a65	1.84	--	--	July 17	1000	12	0.34	4.37	1.332
June 2	1300	*179	5.07	*6.02	1.835						

a Backwater from ice.
No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	12	.00	.00	152	.00	.00	.00
2	.00	.00	.00	.00	.00	8.2	.05	.00	174	.00	.00	.00
3	.00	.00	.00	.00	.00	5.0	.01	.00	156	.00	.00	.00
4	.00	.00	.00	.00	.00	2.0	.00	.00	124	.00	.00	.00
5	.00	.00	.00	.00	.00	1.0	.00	.00	94	.00	.00	.00
6	.00	.00	.00	.00	.00	.50	.00	.00	73	.00	.00	.00
7	.00	.00	.00	.00	.00	.20	.00	.00	58	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	53	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	50	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	48	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.04	.00	43	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.10	.00	35	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.05	.00	27	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.01	.02	18	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.10	10	.94	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.11	3.6	6.0	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.10	1.2	12	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.05	.53	8.2	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.01	.28	2.4	.00	.00
20	.00	.00	.00	.00	4.0	.06	.00	.00	.19	1.2	.00	.00
21	.00	.00	.00	.00	18	.02	.00	.00	.12	1.0	.00	.00
22	.00	.00	.00	.00	8.0	.00	.00	.00	.06	.28	.00	.00
23	.00	.00	.00	.00	40	.01	.00	.00	.01	.12	.00	.00
24	.00	.00	.00	.00	60	.11	.00	.00	.00	.02	.00	.00
25	.00	.00	.00	.00	55	.05	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	40	.00	.00	.01	.00	.00	.00	.00
27	.00	.00	.00	.00	30	.00	.00	.10	.00	.00	.00	.00
28	.00	.00	.00	.00	24	.00	.00	.12	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.10	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.02	.00	.08	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	68	---	.00	.00	---
TOTAL	.00	.00	.00	.00	279.00	29.17	.26	68.80	1120.99	32.16	.00	.00
MEAN	.000	.000	.000	.000	9.96	.94	.009	2.22	37.4	1.04	.000	.000
MAX	.00	.00	.00	.00	60	12	.10	68	174	12	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	553	58	.5	136	2220	64	.00	.00

CAL YR 1981 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00
WTR YR 1982 TOTAL 1530.38 MEAN 4.19 MAX 174 MIN .00 AC-FT 3040

06478690 WEST FORK VERMILLION RIVER NEAR PARKER, SD

LOCATION.--Lat 43°24'55", long 97°12'18", in NE¼NE¼ sec.10, T.99 N., R.54 W., Turner County, Hydrologic Unit 10170102, on left downstream wingwall of bridge, 3.7 mi (6.0 km) northwest of Parker and 13.9 mi (22.4 km) upstream from confluence with East Fork Vermillion River.

DRAINAGE AREA.--370 mi² (958 km²), approximately.

PERIOD OF RECORD.--August 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,340 ft (408 m), from topographic map. Prior to Oct. 11, 1973, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 19.5 ft³/s (0.552 m³/s), 14,130 acre-ft/yr (17.4 hm³/yr); median of yearly mean discharges, 8.5 ft³/s (0.24 m³/s), 6,200 acre-ft/yr (7.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,340 ft³/s (123 m³/s) Mar. 28, 1962, gage height, 12.33 ft (3.758 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft³/s (4.25 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 23	0245	250	7.08	a*8.31	2.533	June 1	2000	*325	9.20	5.57	1.698

a Backwater from ice.
No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	102	4.3	.12	234	.88	.28	.02
2	.00	.00	.00	.00	.00	80	4.3	.18	220	.45	.15	.00
3	.00	.00	.00	.00	.00	77	4.3	.38	99	.54	.08	.00
4	.00	.00	.00	.00	.00	75	4.4	.27	61	.52	.04	.00
5	.00	.00	.00	.00	.00	71	4.5	.27	43	.49	.03	.00
6	.00	.00	.00	.00	.00	67	4.8	.22	39	1.4	.03	.00
7	.00	.00	.00	.00	.00	63	5.5	.12	31	.72	.03	.00
8	.00	.00	.00	.00	.00	57	5.8	.09	35	.37	.02	.00
9	.00	.00	.00	.00	.00	50	6.2	.15	26	.44	.03	.15
10	.00	.00	.00	.00	.00	45	6.0	.15	19	.24	.03	6.2
11	.00	.00	.00	.00	.00	44	6.2	.09	16	.19	.19	.94
12	.00	.00	.00	.00	.00	40	8.2	.15	13	.13	.04	.35
13	.00	.00	.00	.00	.00	36	8.8	.09	11	.12	.02	.09
14	.00	.00	.00	.00	.00	31	8.5	.18	9.7	.12	.00	.04
15	.00	.00	.00	.00	.00	20	7.5	.62	8.9	.10	.00	.03
16	.00	.00	.00	.00	.00	9.0	6.0	.72	7.4	.06	.00	.04
17	.00	.00	.00	.00	.00	8.2	7.5	.62	6.2	.04	.00	.04
18	.00	.00	.00	.00	.30	7.8	6.5	5.1	5.6	.05	.00	.04
19	.00	.00	.00	.00	1.0	10	5.3	6.4	4.6	.05	.00	.04
20	.00	.00	.00	.00	3.5	16	3.3	6.3	3.4	.05	.00	.05
21	.00	.00	.00	.00	13	14	2.3	5.2	2.1	.10	.01	.05
22	.00	.00	.00	.00	40	11	1.9	3.5	1.9	.05	.00	.05
23	.00	.00	.00	.00	210	9.0	1.4	3.1	1.7	.04	.00	.05
24	.00	.00	.00	.00	190	8.2	1.2	3.0	3.0	.96	.02	.05
25	.00	.00	.00	.00	130	8.0	.94	3.3	5.7	6.7	.00	.05
26	.00	.00	.00	.00	110	6.8	.72	6.5	4.4	5.2	.00	.06
27	.00	.00	.00	.00	90	5.5	.72	7.4	3.2	4.2	.00	.07
28	.00	.00	.00	.00	95	5.1	.44	9.8	3.2	2.8	.00	.07
29	.00	.00	.00	.00	---	4.6	.38	13	2.8	2.1	.03	.07
30	.00	.00	.00	.00	---	6.2	.32	17	2.4	.70	.00	.07
31	.00	---	.00	.00	---	5.3	---	35	---	.36	1.7	---
TOTAL	.00	.00	.00	.00	882.80	992.7	130.22	129.02	923.2	30.17	2.73	8.62
MEAN	.000	.000	.000	.000	31.5	32.0	4.34	4.16	30.8	.97	.088	.29
MAX	.00	.00	.00	.00	210	102	8.8	35	234	6.7	1.7	6.2
MIN	.00	.00	.00	.00	.00	4.6	.32	.09	1.7	.04	.00	.00
AC-FT	.00	.00	.00	.00	1750	1970	258	256	1830	60	5.4	17

CAL YR 1981 TOTAL 5.39 MEAN .015 MAX 1.6 MIN .00 AC-FT 11
WTR YR 1982 TOTAL 3099.46 MEAN 8.49 MAX 234 MIN .00 AC-FT 6150

06479000 VERMILLION RIVER NEAR WAKONDA, SD

LOCATION.--Lat 42°59'27", long 96°57'49", in SW¼NW¼ sec.2, T.94 N., R.52 W., Clay County, Hydrologic Unit 10170102, on left bank 40 ft (12 m) downstream from bridge on State Highway 19, 4.3 mi (6.9 km) downstream from Frog Creek, 7.4 mi (11.9 km) southeast of Wakonda, and 29.6 mi (47.6 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi² (4,351 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,150.9 ft (350.79 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 2, 1954, nonrecording gage and crest-stage gage at site 40 ft (12 m) upstream at same datum. Since Dec. 27, 1951, supplementary nonrecording gage on relief bridge.

REMARKS.--Records poor. At times during periods of high stage, part of flow leaves main channel through levee breaks and bypasses gage through overflow channel on left bank. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--37 years, 107 ft³/s (3.030 m³/s), 77,520 acre-ft/yr (95.6 hm³/yr); median of yearly mean discharges, 75 ft³/s (2.12 m³/s), 54,300 acre-ft/yr (67 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,880 ft³/s (280 m³/s) Apr. 8, 1969; maximum gage height, 17.17 ft (5.233 m) Apr. 6, 1969; no flow at times in 1951, 1956-59, 1975-77, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 923 ft³/s (26.1 m³/s) at 0915 hours, May 31, gage height, 11.64 ft (3.548 m), no peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily discharge, 0.55 ft³/s (0.016 m³/s) Oct. 7-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	1.3	4.0	1.5	.80	250	72	28	765	43	17	20
2	.60	1.2	4.0	1.5	.80	210	67	27	653	42	15	18
3	.60	1.2	3.7	1.5	.80	160	50	26	528	40	13	16
4	.60	1.2	3.4	1.5	.80	130	37	25	488	37	11	15
5	.60	1.2	3.3	1.5	.80	130	37	25	413	34	11	12
6	.60	1.2	3.4	1.0	.80	120	43	25	316	35	9.8	11
7	.55	1.2	2.9	1.0	.80	150	49	24	252	35	9.3	10
8	.55	1.2	2.2	1.0	.80	150	57	23	214	33	9.0	9.0
9	.55	1.4	3.8	1.0	.80	100	50	23	187	34	8.0	9.0
10	.55	1.4	2.0	1.0	.80	100	56	26	161	42	7.0	10
11	.55	1.6	2.0	1.0	.80	90	61	24	146	37	7.0	10
12	.55	1.4	2.0	1.0	.80	90	61	24	130	34	6.5	10
13	.60	1.3	2.0	1.0	.80	85	62	24	115	35	7.0	10
14	1.0	1.3	2.0	1.0	.90	85	62	25	108	51	8.0	9.0
15	1.0	1.2	2.0	1.0	1.0	95	61	32	115	42	9.0	9.0
16	.70	1.2	1.5	1.0	1.0	92	60	37	107	36	9.0	8.2
17	.90	1.1	1.5	1.0	1.0	90	57	38	99	32	9.0	8.2
18	1.5	3.6	1.5	1.0	1.5	90	54	46	91	29	9.0	8.2
19	1.5	4.7	1.5	1.0	2.0	85	51	57	84	76	9.0	8.2
20	1.5	4.5	1.5	1.0	5.0	80	49	73	75	51	9.0	8.2
21	1.5	4.7	1.5	1.0	50	75	46	71	69	42	8.0	8.2
22	1.5	4.6	1.5	1.0	300	70	44	58	64	42	8.0	8.2
23	1.5	4.6	1.5	1.0	320	100	42	51	60	38	8.5	8.2
24	1.5	4.2	1.5	1.0	340	120	39	193	56	35	13	8.0
25	1.5	4.5	1.5	1.0	370	109	37	285	53	33	15	8.0
26	1.5	3.7	1.5	1.0	350	95	35	471	50	31	15	8.0
27	1.5	3.7	1.5	1.2	340	87	32	440	48	29	18	8.0
28	1.3	3.4	1.5	1.0	300	80	31	367	46	27	18	8.0
29	1.3	3.2	1.5	1.0	---	76	29	417	44	23	21	8.0
30	1.3	3.9	1.5	.90	---	75	28	622	44	21	22	9.0
31	1.3	---	1.5	.80	---	73	---	888	---	19	23	---
TOTAL	31.30	74.9	66.7	33.40	2392.80	3342	1459	4495	5581	1138	362.1	300.6
MEAN	1.01	2.50	2.15	1.08	85.5	108	48.6	145	186	36.7	11.7	10.0
MAX	1.5	4.7	4.0	1.5	370	250	72	888	765	76	23	20
MIN	.55	1.1	1.5	.80	.80	70	28	23	44	19	6.5	8.0
AC-FT	62	149	132	66	4750	6630	2890	8920	11070	2260	718	596

CAL YR 1981 TOTAL 3118.08 MEAN 8.54 MAX 375 MIN .00 AC-FT 6180
WTR YR 1982 TOTAL 19276.80 MEAN 52.8 MAX 888 MIN .55 AC-FT 38240

06479098 MISSOURI RIVER NEAR PONCA, NE

WATER-QUALITY RECORDS

LOCATION.--Lat 42°34'32", long 96°41'01", in SE¼NE¼ sec.14, T.30 N., R.6 E., Dixon County, Hydrologic Unit 10170101, 1.5 mi (2.4 km) northeast of Ponca, 21 mi (33.8 km) downstream from Vermillion River, 16.8 mi (27.0 km) upstream from Big Sioux River and at mile 751.0 (1,208.4 km).

PERIOD OF DAILY RECORD.--
STAGE: May 1974 to current year.

PERIOD OF RECORD.--
SUSPENDED SEDIMENT: October 1976 to October 1981 (discontinued).
BED MATERIAL: October 1976 to October 1981 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,090.00 ft (332.232 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Flow regulated by Lewis and Clark Lake 60.0 mi (96.5 km) upstream (see station 06467000). Gage heights only in files of Corps of Engineers for period May 1974 to September 1982. Several water-discharge measurements, and observations of water temperature and specific conductance were made during the year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET) (81903)	SAM- PLING DEPTH (FEET) (00003)	STREAM VELOC- ITY, POINT (FPS) (81904)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
07...	1200	95.0	14.0	15.2	3.28	624	--	18	30	75	100	--
07...	1203	95.0	--	12.6	3.26	730	--	18	29	72	100	--
07...	1206	95.0	--	11.7	3.50	407	--	26	84	96	100	--
07...	1209	95.0	--	10.0	3.44	476	--	24	36	88	100	--
07...	1212	95.0	--	7.00	4.15	[illegible]	[illegible]	33	69	93	100	--
07...	1215	95.0	--	5.20	4.37	276	--	40	53	97	100	--
07...	1230	245	11.4	10.4	3.28	750	--	2	32	85	100	--
07...	1233	245	--	9.50	3.94	652	--	19	38	91	100	--
07...	1236	245	--	8.10	4.37	707	--	20	30	75	98	100
07...	1239	245	--	5.70	5.24	447	--	32	51	97	100	--
07...	1242	245	--	2.60	5.02	351	--	37	63	100	--	--
07...	1250	385	9.40	--	--	536	3	10	--	--	--	--
07...	1300	445	8.00	7.20	2.94	452	--	30	86	98	100	--
07...	1302	445	--	6.70	2.89	383	--	35	62	99	100	--
07...	1304	445	--	5.70	3.20	379	--	32	88	99	100	--
07...	1306	445	--	4.00	3.26	300	--	38	52	100	--	--
07...	1308	445	--	1.90	3.56	225	--	46	67	100	--	--
07...	1315	545	45.0	33.7	2.86	400	--	32	84	100	--	--
07...	1317	545	--	32.9	2.24	436	--	38	88	100	--	--
07...	1319	545	--	31.5	2.33	392	--	32	81	100	--	--
07...	1321	545	--	29.2	2.55	386	--	33	89	99	100	--
07...	1323	545	--	25.0	2.24	309	--	49	86	100	--	--
07...	1326	545	--	17.5	2.24	163	--	62	81	100	--	--
07...	1329	545	--	8.10	2.51	149	--	79	84	100	--	--
APR												
28...	0950	133	13.8	13.0	2.42	271	--	41	88	100	--	--
28...	0952	133	--	12.4	2.34	510	--	22	29	97	100	--
28...	0954	133	--	11.5	2.61	650	--	20	25	92	100	--
28...	0956	133	--	9.90	2.90	364	--	30	36	98	100	--
28...	0958	133	--	6.90	3.65	311	--	40	52	97	100	--
28...	1000	133	--	3.20	4.26	217	--	53	62	100	--	--
28...	1020	263	15.7	14.7	3.15	435	--	28	36	97	100	--
28...	1022	263	--	14.0	3.18	433	--	28	40	97	100	--
28...	1024	263	--	13.0	3.36	466	--	22	35	95	100	--
28...	1026	263	--	11.1	3.50	308	--	59	54	100	--	--
28...	1028	263	--	7.80	4.04	290	--	52	86	99	100	--
28...	1030	263	--	3.60	4.65	220	--	58	67	100	--	--
28...	1050	397	15.5	--	--	280	10	16	--	--	--	--
28...	1120	523	11.3	10.1	2.09	639	--	21	29	88	100	--
28...	1122	523	--	9.30	2.09	440	--	30	82	92	100	--
28...	1124	523	--	8.00	3.28	413	--	35	88	96	100	--
28...	1126	523	--	5.60	3.94	298	--	48	60	98	100	--
28...	1128	523	--	2.60	4.22	250	--	63	76	100	--	--
28...	1200	653	8.60	7.70	2.42	302	--	36	51	96	100	--
28...	1202	653	--	7.20	2.02	315	--	45	52	98	100	--
28...	1205	653	--	6.10	2.74	314	--	46	60	99	100	--
28...	1210	653	--	4.30	3.18	279	--	65	77	100	--	--
28...	1215	653	--	2.00	3.50	187	--	63	80	100	--	--

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	SAM-PLING DEPTH (FEET) (00003)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
JUN												
16...	1200	100	10.1	9.10	1.97	339	--	59	76	98	98	100
16...	1203	100	--	8.40	2.08	331	--	67	82	100	--	--
16...	1206	100	--	7.20	2.31	338	--	66	80	100	--	--
16...	1209	100	--	5.00	2.53	333	--	70	86	99	100	--
16...	1212	100	--	2.40	2.69	312	--	74	89	100	--	--
16...	1240	220	12.1	12.1	2.96	364	--	48	57	100	--	--
16...	1243	220	--	11.6	2.74	344	--	49	61	99	100	--
16...	1245	220	--	10.8	3.01	341	--	62	70	100	--	--
16...	1248	220	--	9.20	3.28	286	--	69	77	100	--	--
16...	1251	220	--	6.40	3.28	216	--	74	82	100	--	--
16...	1254	220	--	5.00	3.75	191	--	67	96	100	--	--
16...	1330	340	14.8	--	--	371	15	26	--	--	--	--
16...	1410	460	12.9	12.1	2.93	807	--	24	30	55	99	100
16...	1413	460	--	11.6	2.93	591	--	36	48	70	100	--
16...	1416	460	--	10.8	3.18	430	--	40	50	79	100	--
16...	1419	460	--	9.20	3.72	243	--	71	75	87	97	100
16...	1422	460	--	6.40	4.15	235	--	70	77	96	100	--
16...	1425	460	--	3.00	4.22	230	--	73	84	98	100	--
16...	1500	580	12.9	12.1	3.07	410	--	41	51	93	100	--
16...	1503	580	--	11.6	3.28	407	--	44	55	91	100	--
16...	1506	580	--	10.8	3.54	335	--	56	63	96	100	--
16...	1509	580	--	9.20	3.90	323	--	55	65	98	100	--
16...	1512	580	--	6.40	4.04	218	--	73	82	100	--	--
16...	1515	580	--	3.00	4.54	198	--	76	87	100	--	--
16...	1600	700	15.1	14.2	2.17	412	--	42	56	99	100	--
16...	1603	700	--	13.6	2.48	572	--	30	49	98	100	--
16...	1606	700	--	12.6	2.80	322	--	52	67	98	100	--
16...	1609	700	--	10.8	3.11	259	--	65	83	99	100	--
16...	1612	700	--	7.60	3.39	203	--	75	94	100	--	--
16...	1615	700	--	3.50	3.75	177	--	84	96	99	100	--
AUG												
04...	1155	180	7.60	6.80	2.63	428	--	23	35	81	100	--
04...	1157	180	--	6.30	2.80	364	--	26	38	87	100	
04...	1159	180	--	5.40	3.25	341	--	30	45	86	100	
04...	1201	180	--	3.80	3.58	223	--	37	48	93	100	
04...	1203	180	--	1.80	4.04	155	--	52	65	95	100	
04...	1230	300	11.0	9.90	2.20	302	--	26	37	82	100	
04...	1232	300	--	9.20	2.42	327	--	24	33	78	100	
04...	1234	300	--	7.90	3.22	212	--	38	50	92	100	
04...	1236	300	--	5.50	3.74	161	--	58	71	96	100	
04...	1238	300	--	2.50	3.90	113	--	64	84	98	100	
04...	1315	400	13.5	--	--	890	18	27	--	--	--	
04...	1450	500	17.0	16.4	1.97	1020	--	8	13	80	100	
04...	1452	500	--	15.7	2.56	1240	--	7	13	70	100	
04...	1454	500	--	14.5	3.28	773	--	13	22	76	100	
04...	1459	500	--	12.4	3.58	339	--	23	39	88	100	
04...	1500	500	--	8.70	3.86	197	--	40	55	94	100	
04...	1502	500	--	4.00	4.91	168	--	47	62	100	--	
04...	1520	600	18.1	17.6	2.70	360	--	22	37	80	100	
04...	1522	600	--	16.3	2.96	354	--	26	44	87	100	
04...	1524	600	--	15.1	3.28	249	--	33	51	94	100	
04...	1526	600	--	13.0	4.11	147	--	45	61	97	100	
04...	1528	600	--	9.00	4.33	164	--	52	73	100	--	
04...	1530	600	--	4.20	5.02	145	--	43	56	94	100	
04...	1550	700	21.0	20.6	2.31	122	--	73	91	99	100	
04...	1552	700	--	20.1	2.05	120	--	69	89	97	100	
04...	1554	700	--	19.3	2.53	105	--	77	95	99	100	
04...	1556	700	--	17.8	2.72	108	--	77	95	99	100	
04...	1558	700	--	15.3	3.11	131	--	84	99	100	--	
04...	1600	700	--	10.7	3.72	91	--	93	98	99	100	
04...	1602	700	--	4.90	4.15	--	--	--	--	--	--	
SEP												
15...	1200	220	6.60	1.50	3.18	137	--	59	76	100	--	
15...	1202	220	--	3.30	3.11	165	--	49	65	100	--	
15...	1204	220	--	4.70	3.43	184	--	47	64	99	100	
15...	1206	220	--	5.50	3.68	257	--	36	50	97	100	
15...	1208	220	--	5.90	3.74	330	--	26	41	93	100	
15...	1210	330	7.80	6.70	3.36	350	--	20	29	91	100	
15...	1300	330	--	6.20	3.50	267	--	28	39	97	100	
15...	1302	330	--	5.30	3.86	234	--	34	46	97	100	
15...	1304	330	--	3.70	4.04	192	--	39	52	98	100	
15...	1306	330	--	1.70	4.60	129	--	38	56	100	--	

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	SAM-PLING DEPTH (FEET) (00003)	2 STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
SEP												
15...	1340	440	8.00	--	--	255	12	20	--	--	--	--
15...	1400	550	11.8	10.6	3.36	359	--	16	25	49	78	100
15...	1402	550	--	9.80	3.50	364	--	16	26	77	100	--
15...	1404	550	--	8.40	3.61	289	--	24	34	88	100	--
15...	1406	550	--	5.90	4.37	171	--	39	53	98	100	--
15...	1408	550	--	2.70	4.76	117	--	49	61	99	100	--
15...	1450	660	13.8	13.9	3.84	473	--	12	26	73	100	--
15...	1452	660	--	13.3	4.15	423	--	14	29	79	100	--
15...	1454	660	--	12.3	4.28	372	--	15	33	87	100	--
15...	1455	660	--	10.6	4.35	247	--	24	44	97	100	--
15...	1456	660	--	7.40	4.91	186	--	32	52	99	100	--
15...	1458	660	--	3.40	5.13	138	--	46	67	100	--	--
15...	1500	770	19.2	18.1	2.58	255	--	28	46	92	100	--
15...	1540	770	--	17.3	3.54	258	--	29	47	95	100	--
15...	1542	770	--	16.0	3.56	168	--	38	63	99	100	--
15...	1544	770	--	13.7	4.09	155	--	45	72	100	--	--
15...	1546	770	--	9.60	4.09	126	--	47	74	99	100	--
15...	1548	770	--	4.40	4.37	104	--	57	85	100	--	--

DATE	TIME	NUMBER OF SAM-PLING POINTS (00063)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
07...	1330	5	0	1	19	81	92	95	96	98	99	100
APR												
28...	1240	5	--	0	13	95	98	99	99	99	100	--
JUN												
16...	1645	6	0	2	37	89	98	99	99	100	--	--
SEP												
15...	1600	6	0	1	16	75	95	98	99	99	100	--

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET) (81903)	SAMPLING DEPTH (FEET) (00003)	STREAM VELOCITY, POINT (FPS) (81904)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
20...	1220	110	18.9	17.8	2.20	288	--	20	37	99	100	--
20...	1222	110	--	17.0	2.55	204	--	32	50	100	--	--
20...	1224	110	--	15.8	2.72	161	--	41	60	100	--	--
20...	1226	110	--	13.5	2.82	150	--	44	64	97	100	--
20...	1228	110	--	9.40	3.37	118	--	58	76	99	100	--
20...	1230	110	--	4.40	4.15	108	--	53	71	99	100	--
20...	1250	220	14.1	13.3	1.96	490	--	13	24	88	100	--
20...	1252	220	--	12.7	2.14	370	--	19	32	92	100	--
20...	1254	220	--	11.8	2.95	332	--	18	35	68	100	--
20...	1256	220	--	10.0	3.01	239	--	24	37	93	100	--
20...	1258	220	--	7.00	3.43	200	--	32	44	91	100	--
20...	1300	220	--	3.20	3.75	526	--	18	48	90	100	--
20...	1320	330	13.0	--	--	165	6	8	--	--	100	--
20...	1400	440	12.2	11.0	2.20	810	--	10	21	60	100	--
20...	1402	440	--	10.2	2.65	718	--	13	23	80	100	--
20...	1404	440	--	8.70	2.72	479	--	14	30	85	100	--
20...	1406	440	--	6.10	4.11	354	--	20	35	96	100	--
20...	1408	440	--	2.82	4.56	213	--	30	45	98	100	--
20...	1440	550	12.5	10.4	3.06	541	--	14	27	95	100	--
20...	1442	550	--	11.2	3.54	525	--	13	28	93	100	--
20...	1444	550	--	9.00	3.72	371	--	19	35	97	100	--
20...	1446	550	--	6.20	4.15	233	--	30	46	98	100	--
20...	1448	550	--	2.90	4.37	183	--	32	50	97	100	--
20...	1520	660	9.20	9.20	3.37	528	--	16	28	97	100	--
20...	1522	660	--	8.50	3.72	461	--	21	35	99	100	--
20...	1524	660	--	7.30	4.02	353	--	25	36	95	100	--
20...	1526	660	--	5.10	4.17	228	--	29	47	98	100	--
20...	1528	660	--	2.40	4.28	173	--	40	52	96	100	--
APR												
27...	1310	200	9.90	6.90	2.61	1190	--	6	11	44	98	100
27...	1312	200	--	8.20	2.85	522	--	17	27	60	100	--
27...	1314	200	--	7.00	3.39	254	--	32	42	87	100	--
27...	1316	200	--	5.00	3.50	205	--	43	52	95	100	--
27...	1318	200	--	2.30	4.04	156	--	54	68	97	100	--
27...	1340	325	12.5	--	--	1100	6	56	--	--	--	--
27...	1415	450	13.2	12.4	1.95	756	--	11	20	62	100	--
27...	1417	450	--	11.9	2.93	760	--	11	25	66	100	--
27...	1419	450	--	11.0	2.77	569	--	14	25	70	100	--
27...	1421	450	--	9.40	3.08	306	--	27	43	94	100	--
27...	1423	450	--	6.60	3.61	235	--	34	49	96	100	--
27...	1425	450	--	3.10	3.94	278	--	28	45	97	100	
27...	1440	575	14.5	13.6	2.72	675	--	13	25	88	100	
27...	1442	575	--	13.0	2.96	759	--	10	20	85	100	
27...	1444	575	--	12.1	2.53	552	--	14	29	89	100	
27...	1446	575	--	10.4	2.96	475	--	16	30	90	100	
27...	1448	575	--	7.20	3.34	306	--	24	43	98	100	
27...	1450	575	--	3.40	4.00	261	--	23	42	94	100	
27...	1505	700	14.2	13.4	1.85	370	--	23	45	99	100	
27...	1507	700	--	12.6	2.17	337	--	26	53	100	--	
27...	1509	700	--	11.8	2.31	279	--	29	55	100	--	
27...	1511	700	--	10.1	2.77	254	--	33	52	99	100	
27...	1513	700	--	7.10	3.01	175	--	47	71	100	--	
27...	1515	700	--	3.30	3.25	157	--	48	70	96	100	
JUN												
22...	1345	200	12.8	12.0	2.29	226	--	42	55	96	100	
22...	1347	200	--	11.5	2.69	225	--	42	53	96	100	
22...	1349	200	--	10.7	2.72	196	--	46	54	95	100	
22...	1351	200	--	9.10	3.18	157	--	49	62	100	--	
22...	1353	200	--	6.40	3.65	135	--	56	69	100	--	
22...	1355	200	--	3.00	3.72	156	--	59	69	100	--	
22...	1010	340	18.2	17.1	2.96	320	--	30	52	93	100	
22...	1013	340	--	16.4	3.07	295	--	38	56	93	100	
22...	1016	340	--	15.2	3.54	222	--	39	60	96	100	
22...	1019	340	--	13.0	3.94	209	--	46	68	100	--	
22...	1022	340	--	9.10	5.40	178	--	47	69	95	100	
22...	1025	340	--	4.20	5.13	233	--	43	55	98	100	
22...	1035	480	17.5	--	--	2280	21	31	--	--	--	
22...	1500	620	13.1	12.3	1.96	532	--	18	35	96	100	
22...	1503	620	--	11.6	2.63	677	--	13	28	88	100	
22...	1506	620	--	10.9	2.22	464	--	22	42	93	100	
22...	1509	620	--	9.40	3.72	311	--	32	52	97	100	
22...	1512	620	--	6.50	3.83	192	--	42	63	97	100	
22...	1515	620	--	3.00	4.15	220	--	44	60	96	100	
22...	1527	760	11.1	10.0	2.44	576	--	19	34	85	100	
22...	1529	760	--	9.20	2.74	542	--	22	35	80	100	
22...	1531	760	--	7.40	2.96	424	--	26	41	89	100	
22...	1533	760	--	5.50	3.71	254	--	49	65	95	100	
22...	1535	760	--	2.50	4.22	222	--	45	65	98	100	

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	SAM-PLING DEPTH (FEET) (00003)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
JUL												
27...	1330	230	15.5	14.7	3.01	513	--	26	33	95	100	
27...	1332	230	--	14.0	4.30	420	--	30	41	95	100	--
27...	1333	230	--	13.0	3.28	467	--	28	35	94	100	--
27...	1336	230	--	11.1	3.72	341	--	44	53	97	100	--
27...	1338	230	--	7.80	4.11	211	--	63	72	98	100	--
27...	1340	230	--	3.80	4.43	187	--	70	80	100	--	--
27...	1355	360	21.0	20.2	1.37	862	--	13	22	75	100	--
27...	1400	360	--	19.8	1.24	908	--	13	24	75	100	--
27...	1402	360	--	18.9	2.05	797	--	16	27	80	100	--
27...	1404	360	--	17.5	3.01	543	--	24	37	86	100	--
27...	1406	360	--	15.0	3.81	348	--	38	53	93	100	--
27...	1408	360	--	10.5	4.43	289	--	42	56	95	100	--
27...	1410	360	--	4.40	4.97	221	--	55	68	100	--	--
27...	1430	490	18.0	--	--	368	14	26	--	--	--	--
27...	1455	620	17.1	16.1	2.74	821	--	13	23	47	95	100
27...	1457	620	--	15.4	2.85	667	--	16	48	94	100	--
27...	1459	620	--	14.2	3.79	380	--	32	46	75	100	--
27...	1501	620	--	12.2	4.15	338	--	34	50	88	100	--
27...	1503	620	--	8.60	5.06	209	--	50	65	95	100	--
27...	1505	620	--	4.00	5.34	208	--	52	70	93	100	--
27...	1515	750	22.0	21.2	2.77	445	--	26	45	70	100	--
27...	1520	750	--	20.7	2.69	195	--	47	66	92	100	--
27...	1522	750	--	16.3	3.07	270	--	38	62	93	100	--
27...	1524	750	--	11.0	3.58	192	--	57	75	100	--	--
27...	1526	750	--	5.10	3.75	193	--	57	70	92	100	--
27...	1528	750	--	19.8	4.11	381	--	29	47	76	100	--
27...	1530	750	--	15.7	4.76	237	--	47	68	97	100	--
SEP												
20...	1058	100	7.00	6.30	2.89	239	--	30	37	72	100	--
20...	1102	100	--	5.80	2.74	238	--	29	39	71	100	--
20...	1107	100	--	5.00	2.85	211	--	38	45	82	100	--
20...	1111	100	--	3.50	3.86	168	--	60	72	89	99	100
20...	1116	100	--	1.60	3.83	162	--	62	70	89	100	--
20...	1124	200	10.4	10.4	3.72	667	--	16	23	62	100	--
20...	1129	200	--	9.50	4.04	556	--	17	22	63	100	--
20...	1130	200	--	8.10	4.22	315	--	24	33	74	100	--
20...	1134	200	--	5.70	4.26	211	--	35	45	90	100	--
20...	1138	200	--	2.60	4.81	171	--	46	56	90	100	--
20...	1143	300	13.8	13.0	3.00	1080	--	8	14	57	98	100
20...	1146	300	--	12.4	3.28	731	--	13	23	60	99	100
20...	1148	300	--	11.5	3.10	455	--	22	33	74	100	--
20...	1150	300	--	9.90	3.72	416	--	24	35	78	100	--
20...	1152	300	--	6.90	4.26	339	--	24	36	80	100	--
20...	1155	300	--	3.20	4.76	179	--	42	55	92	100	--
20...	1203	400	18.1	--	--	395	12	17	--	--	--	--
20...	1227	500	20.9	19.8	3.50	633	--	16	31	82	100	--
20...	1230	500	--	18.7	3.65	657	--	13	28	77	100	--
20...	1233	500	--	17.3	3.84	492	--	16	32	85	97	100
20...	1236	500	--	14.9	4.48	360	--	21	41	90	100	--
20...	1240	500	--	10.4	4.97	301	--	27	46	93	100	--
20...	1245	500	--	4.80	5.62	236	--	41	60	95	100	--
20...	1253	580	24.9	24.0	2.42	441	--	20	41	77	95	100
20...	1256	580	--	23.4	2.63	421	--	20	41	83	97	100
20...	1259	580	--	22.4	2.85	341	--	28	50	87	97	100
20...	1303	580	--	20.6	3.26	300	--	30	55	93	100	--
20...	1306	580	--	18.0	3.94	251	--	40	64	96	100	--
20...	1310	580	--	12.6	4.91	185	--	50	72	100	--	--
20...	1315	580	--	5.60	5.56	158	--	56	75	91	100	--

DATE	TIME	NUMBER OF SAM-PLING POINTS (00063)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
20...	1630	5	0	1	36	65	96	98	99	100	--	--
APR												
27...	1525	6	0	1	21	90	96	98	99	100	--	--
JUN												
22...	1540	6	0	1	18	73	90	92	95	95	96	100
JUL												
27...	1540	5	--	0	26	73	93	97	99	100	--	--
SEP												
20...	1325	6	--	0	16	77	94	100	--	--	--	--

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	SAM-PLING DEPTH (FEET) (00003)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT											
26...	1258	160	11.9	10.6	3.28	345	--	35	52	85	100
26...	1300	160	--	9.60	4.04	348	--	40	56	92	100
26...	1303	160	--	6.40	3.82	331	--	39	57	90	100
26...	1306	160	--	5.90	4.54	295	--	50	66	97	100
26...	1309	160	--	2.70	4.80	441	--	29	47	96	100
26...	1315	290	14.0	13.2	3.90	601	--	29	49	88	100
26...	1317	290	--	12.6	4.39	617	--	19	33	77	100
26...	1319	290	--	11.7	4.00	490	--	28	48	80	100
26...	1321	290	--	10.0	4.43	536	--	25	39	73	100
26...	1323	290	--	7.00	4.65	366	--	35	54	88	100
26...	1325	290	--	3.20	5.08	314	--	38	59	90	100
26...	1343	420	17.1	--	--	518	6	13	--	--	--
26...	1410	550	21.9	21.1	4.04	1660	--	8	14	69	100
26...	1413	550	--	20.8	4.43	1190	--	10	22	94	100
26...	1416	550	--	19.9	4.60	1130	--	16	20	68	100
26...	1419	550	--	18.4	4.60	768	--	17	26	96	100
26...	1422	550	--	15.8	5.02	2170	--	18	31	96	100
26...	1425	550	--	11.0	5.40	484	--	24	40	97	100
26...	1428	550	--	5.10	6.11	273	--	37	55	95	100
26...	1440	680	22.8	22.0	3.04	616	--	29	53	100	--
26...	1443	680	--	21.5	3.07	358	--	33	56	100	--
26...	1446	680	--	20.5	3.07	312	--	39	64	100	--
26...	1449	680	--	19.0	3.61	316	--	36	58	100	--
26...	1452	680	--	16.3	3.94	1010	--	22	54	100	--
26...	1455	680	--	11.4	5.24	267	--	52	72	98	100
26...	1458	680	--	5.30	4.91	305	--	37	56	96	100
APR											
26...	1510	690	7.80	1.80	3.59	160	--	37	56	95	100
26...	1512	690	--	3.90	2.92	198	--	27	48	100	--
26...	1514	690	--	5.60	2.85	269	--	21	41	95	100
26...	1516	690	--	6.50	2.50	386	--	14	33	92	100
26...	1520	690	--	7.00	2.81	468	--	11	28	91	100
26...	1525	440	7.60	1.80	3.59	303	--	17	36	95	100
26...	1526	440	--	3.80	3.33	309	--	17	40	97	100
26...	1527	440	--	5.40	3.15	418	--	14	34	98	100
26...	1528	440	--	6.30	2.98	541	--	11	28	90	100
26...	1529	440	--	6.80	2.89	804	--	7	20	88	100
26...	1530	300	19.2	4.40	--	563	5	8	--	--	--
26...	1545	220	17.9	4.10	5.56	360	--	14	32	94	100
26...	1547	220	--	89.0	5.24	285	--	17	38	95	100
26...	1549	220	--	12.8	3.94	397	--	12	30	91	100
26...	1550	220	--	14.9	3.15	506	--	10	27	82	100
26...	1552	220	--	16.1	2.78	605	--	8	22	70	100
26...	1553	220	--	16.9	1.76	815	--	6	20	73	100
26...	1555	130	13.0	3.00	5.45	0	--	17	37	95	100
26...	1557	130	--	6.40	5.09	342	--	18	36	100	--
26...	1559	130	--	9.30	4.30	628	--	10	26	97	100
26...	1601	130	--	10.8	3.94	722	--	9	23	96	100
26...	1603	130	--	11.7	3.59	630	--	12	26	91	100
26...	1605	130	--	12.2	3.61	832	--	7	20	91	100
JUN											
07...	1440	710	15.1	3.50	4.61	268	--	37	53	94	100
07...	1442	710	--	7.50	4.15	240	--	41	60	96	100
07...	1444	710	--	10.8	3.83	373	--	31	49	95	100
07...	1446	710	--	12.6	3.28	427	--	23	41	94	100
07...	1448	710	--	13.6	3.11	601	--	18	35	79	100
07...	1451	710	--	14.2	2.59	547	--	17	39	84	100
07...	1453	560	16.3	3.70	4.80	300	--	30	45	69	100
07...	1455	560	--	8.10	4.02	276	--	30	46	96	100
07...	1456	560	--	11.6	3.98	285	--	31	49	95	100
07...	1457	560	--	13.6	3.28	441	--	26	46	89	100
07...	1458	560	--	14.7	3.13	445	--	20	38	77	100
07...	1500	560	--	15.3	3.11	453	--	22	43	88	100
07...	1502	435	16.8	--	--	286	15	23	--	--	--
07...	1512	340	17.8	4.10	4.83	262	--	52	62	96	100
07...	1513	340	--	8.90	4.76	269	--	47	57	97	100
07...	1514	340	--	12.7	4.20	280	--	34	49	95	100
07...	1515	340	--	14.8	4.00	334	--	38	45	95	100
07...	1516	340	--	16.0	3.89	428	--	26	37	89	100
07...	1518	380	--	16.8	3.98	1650	--	67	71	91	100
07...	1520	235	14.0	3.20	4.37	343	--	45	57	93	100
07...	1522	235	--	7.00	4.20	166	--	7	28	97	100
07...	1524	235	--	10.0	3.28	457	--	32	47	97	100
07...	1526	235	--	11.7	3.39	542	--	28	42	96	100
07...	1528	235	--	12.6	3.07	611	--	24	34	92	100
07...	1530	235	--	13.2	2.74	689	--	21	33	86	100
JUL											
19...	1910	675	19.2	18.1	2.66	170	--	34	62	95	100
19...	1911	675	--	17.3	2.68	169	--	33	58	98	100
19...	1913	675	--	16.0	3.11	161	--	51	72	96	100

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	SAM-PLING DEPTH (FEET) (00003)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
JUL												
19...	1414	675	--	13.7	3.61	147	--	46	71	100	--	--
19...	1415	675	--	9.60	4.26	72	--	79	89	99	100	--
19...	1417	675	--	4.40	4.44	109	--	48	64	97	100	--
19...	1420	575	16.1	15.2	2.74	417	--	14	36	75	100	--
19...	1421	575	--	14.5	3.42	310	--	21	38	79	100	--
19...	1422	575	--	13.4	3.74	276	--	20	39	82	100	--
19...	1423	575	--	11.5	3.89	229	--	25	43	92	100	--
19...	1424	575	--	6.00	4.46	167	--	30	52	97	100	--
19...	1425	575	--	3.70	5.35	178	--	28	52	98	100	--
19...	1430	430	13.7	--	--	451	9	14	--	--	--	--
19...	1440	310	13.5	12.7	3.02	443	--	14	20	92	100	--
19...	1441	310	--	12.2	3.50	524	--	12	22	82	100	--
19...	1442	310	--	11.2	3.86	429	--	15	26	92	100	--
19...	1443	310	--	9.60	3.96	379	--	17	29	94	100	--
19...	1444	310	--	6.60	4.00	368	--	19	22	89	100	--
19...	1445	310	--	3.10	4.17	239	--	31	44	92	100	--
19...	1450	160	12.2	11.0	2.27	454	--	15	27	89	100	--
19...	1451	160	--	10.2	2.35	330	--	24	35	96	100	--
19...	1452	160	--	6.70	2.48	221	--	32	44	95	100	--
19...	1453	160	--	6.10	3.15	179	--	38	50	100	--	--
19...	1455	160	--	2.80	3.70	177	--	41	55	96	100	--
AUG												
30...	1415	670	20.0	18.8	2.61	116	--	40	70	95	100	--
30...	1417	670	--	18.0	2.98	113	--	48	70	93	100	--
30...	1419	670	--	16.7	2.59	104	--	41	69	93	100	--
30...	1420	670	--	14.3	4.11	78	--	53	83	95	100	--
30...	1422	670	--	10.0	4.72	69	--	60	89	100	--	--
30...	1424	670	--	4.60	4.96	69	--	50	78	100	--	--
30...	1427	590	18.7	17.6	2.81	646	--	7	17	55	100	--
30...	1428	590	--	16.8	2.83	659	--	7	18	57	99	100
30...	1430	590	--	15.6	3.20	525	--	9	20	63	100	--
30...	1432	590	--	13.4	3.73	258	--	18	37	90	100	--
30...	1433	590	--	9.40	4.80	--	--	--	--	--	--	--
30...	1434	590	--	4.30	5.19	114	--	38	62	96	100	--
30...	1437	510	16.0	--	--	446	7	12	--	--	--	--
30...	1447	390	9.50	8.60	2.94	360	--	18	37	93	100	--
30...	1449	390	--	7.90	3.11	354	--	17	36	89	100	--
30...	1451	390	--	6.80	3.20	324	--	20	39	93	100	--
30...	1453	390	--	4.60	3.89	227	--	25	45	95	100	--
30...	1455	390	--	2.20	4.15	172	--	35	55	93	100	--
30...	1500	190	7.50	6.80	1.24	609		13	28	87	100	
30...	1501	190	--	6.20	1.61	489		15	29	87	100	
30...	1503	190	--	5.30	3.20	389		18	34	91	100	
30...	1505	190	--	3.80	3.24	295		23	41	96	100	
30...	1507	190	--	1.80	3.78	185		37	55	96	100	

DATE	TIME	NUMBER OF SAM-PLING POINTS (00063)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
26...	1505	5	--	0	10	73	78	84	88	91	97	100
APR												
26...	1610	5	0	1	31	94	99	100	--	--	--	--
JUN												
07...	1540	5	--	0	15	82	96	98	98	99	100	--
JUL												
19...	1500	5	0	1	21	82	97	99	100	--	--	--
AUG												
30...	1517	5	--	0	10	63	92	97	99	100	--	--

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	SAM- PLING DEPTH (FEET) (00003)	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET) (81903)	STREAM VELOC- ITY, POINT (FPS) (81904)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
22...	1255	175	2.00	8.80	3.86	132	19	54	72	96	100	--
22...	1258	175	4.40	8.80	3.70	125	19	48	65	91	100	--
22...	1301	175	6.30	8.80	3.60	208	19	23	47	82	100	--
22...	1304	175	7.30	8.80	3.18	325	19	27	78	100	--	--
22...	1307	175	7.90	8.80	3.07	645	19	32	40	97	100	--
22...	1310	400	2.10	9.30	3.94	181	37	45	66	90	100	--
22...	1313	400	4.60	9.30	3.66	256	27	47	36	86	100	--
22...	1316	400	6.60	9.30	3.44	295	25	34	50	76	100	--
22...	1319	400	7.70	9.30	3.46	411	17	33	45	68	90	100
22...	1322	400	8.30	9.30	3.12	465	14	20	33	62	100	--
22...	1325	535	3.10	13.7	4.71	238	34	55	70	97	100	--
22...	1328	535	6.80	13.7	4.42	354	22	28	47	90	100	--
22...	1331	535	9.70	13.7	3.66	469	14	25	42	79	99	100
22...	1334	535	11.3	13.7	3.55	507	12	15	34	86	100	--
22...	1337	535	12.2	13.7	3.46	570	13	21	36	72	100	--
22...	1340	535	12.8	13.7	3.36	717	10	16	31	69	100	--
22...	1343	625	4.30	18.5	5.03	196	35	42	61	98	100	--
22...	1346	625	9.20	18.5	4.25	203	29	41	60	98	100	--
22...	1349	625	13.1	18.5	3.84	262	19	47	65	69	100	--
22...	1352	625	15.3	18.5	3.09	388	11	16	30	80	100	--
22...	1355	625	16.6	18.5	2.96	473	12	14	27	77	100	--
22...	1358	625	17.3	18.5	2.79	618	8	14	21	75	100	--
22...	1401	715	5.00	21.8	4.29	119	66	85	95	100	--	--
22...	1404	715	10.9	21.8	3.81	107	70	82	93	100	--	--
22...	1407	715	15.6	21.8	3.38	119	60	76	93	100	[illegible]	--
22...	1410	715	18.2	21.8	2.74	111	61	68	89	100	--	--
22...	1413	715	19.6	21.8	2.40	115	61	92	91	100	--	--
22...	1416	715	20.5	21.8	2.46	123	60	74	94	100	--	--
22...	1419	715	21.0	21.8	1.83	108	60	75	87	100	--	--

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT											
22...	1422	175	--	15	85	97	97	99	--	100	--
22...	1425	400	--	12	92	99	99	99	100	--	--
22...	1428	535	--	18	95	100	100	--	--	--	--
22...	1431	625	--	20	93	100	--	--	--	--	--
22...	1434	715	--	--	23	85	87	97	--	100	--

06479438 BIG SIOUX RIVER NEAR WATERTOWN, SD

LOCATION.--Lat 45°00'22", long 97°09'53", in NE¼NE¼NE¼ sec.16, T.118 N., R.52 W., Codington County, Hydrologic Unit 10170202, on left bank at downstream side of county highway bridge, 4.9 mi (7.9 km) downstream from Mahoney Creek, 6.5 mi (10.5 km) upstream from inlet-outlet to Lake Kampeska, and 7.5 mi (12.1 km) northwest of Watertown.

DRAINAGE AREA.--1,025 mi² (2,655 km²), approximately, revised.

PERIOD OF RECORD.--October 1972 to current year.

REVISED RECORDS.--WDR SD-78-1: 1973-74(M), 1976-77(M).

GAGE.--Water-stage recorder. Datum of gage is 1,725.81 ft (526.027 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--10 years, 18.4 ft³/s (0.521 m³/s), 13,330 acre-ft/yr (16.4 hm³/yr); median of yearly mean discharge, 9.4 ft³/s (0.27 m³/s), 6,800 acre-ft/yr (8.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,720 ft³/s (105 m³/s) Mar. 30, 1978, gage height, 11.07 ft (3.374 m); no flow at times in 1974-82.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 250 ft³/s (7.08 m³/s) at 2200 hours, Mar. 30, gage height, 8.97 ft (2.734 m), backwater from ice, no peak above base of 300 ft³/s (8.50 m³/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 14, Sept. 24-30;
stage-discharge relation affected by ice Dec. 15 to Apr. 5)

3.38	0	3.6	1.8	4.5	31
3.4	.03	3.7	4.0	5.0	61
3.5	.39	4.0	11	5.5	94

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.14	.45	.00	.00	1.8	180	9.8	41	.56	.21	.00
2	.03	.14	.60	.00	.00	1.6	120	8.8	40	.44	.23	.00
3	.09	.18	.24	.00	.00	1.5	100	7.9	34	.43	.31	.00
4	.12	.03	.15	.00	.00	1.4	90	7.6	27	.22	.25	.00
5	.15	.12	.07	.00	.00	1.3	75	8.0	23	.06	.28	.05
6	.12	.00	.06	.00	.00	1.2	63	8.7	22	.05	.27	.02
7	.06	.08	.04	.00	.00	1.1	45	9.2	19	.30	.21	.00
8	.12	.06	.03	.00	.00	1.1	34	8.7	18	.34	.13	.03
9	.09	.04	.02	.00	.00	1.2	28	8.6	15	.23	.17	.04
10	.06	.08	.02	.00	.00	1.3	25	8.6	13	.23	.12	.03
11	.06	.09	.01	.00	.00	1.6	24	8.8	12	.24	.15	.04
12	.15	.10	.02	.00	.00	1.9	22	10	11	.37	.09	.21
13	.15	.12	.03	.00	.00	2.3	20	11	9.8	.49	.11	.10
14	.15	.10	.02	.00	.00	3.0	21	15	9.0	.72	.15	.07
15	.13	.06	.02	.00	.00	4.5	20	18	8.1	2.3	.13	.11
16	.12	.07	.02	.00	.00	6.2	20	19	6.9	2.0	.19	.06
17	.12	.07	.01	.00	.00	8.0	21	20	7.1	.60	.08	.03
18	.00	.13	.01	.00	.20	5.3	20	20	7.4	.41	.11	.02
19	.01	.27	.01	.00	.70	4.1	20	19	6.2	.34	.32	.02
20	.12	.74	.01	.00	2.0	5.2	18	19	5.3	.27	.45	.00
21	.21	1.2	.02	.00	3.5	4.7	19	18	4.5	.27	.12	.01
22	.17	.47	.03	.00	3.3	4.4	17	16	3.7	.29	.12	.00
23	.17	.30	.03	.00	3.0	5.1	15	14	3.0	.30	.10	.00
24	.18	.24	.02	.00	2.7	4.4	14	13	2.6	.28	.06	.00
25	.18	.47	.02	.00	2.5	4.0	13	13	2.1	.28	.02	.00
26	.14	.58	.02	.00	2.3	3.9	12	13	2.0	.33	.00	.00
27	.14	.53	.01	.00	2.1	3.8	11	13	1.7	.39	.00	.01
28	.16	.58	.01	.00	1.9	3.8	10	12	1.5	.44	.00	.00
29	.17	.62	.00	.00	---	10	9.9	13	1.6	.35	.09	.00
30	.19	.29	.00	.00	---	200	9.6	19	1.0	.19	.07	.00
31	.13	---	.00	.00	---	230	---	30	---	.19	.05	---
TOTAL	3.70	7.90	2.00	.00	24.20	529.7	1096.5	419.7	358.5	13.91	4.59	.85
MEAN	.12	.26	.065	.000	.86	17.1	36.6	13.5	12.0	.45	.15	.028
MAX	.21	1.2	.60	.00	3.5	230	180	30	41	2.3	.45	.21
MIN	.00	.00	.00	.00	.00	1.1	9.6	7.6	1.0	.05	.00	.00
AC-FT	7.3	16	4.0	.00	48	1050	2170	832	711	28	9.1	1.7

CAL YR 1981 TOTAL 785.33 MEAN 2.15 MAX 78 MIN .00 AC-FT 1560
WTR YR 1982 TOTAL 2461.55 MEAN 6.74 MAX 230 MIN .00 AC-FT 4880

06479515 WILLOW CREEK NEAR WATERTOWN, SD

LOCATION.--Lat 44°54'17", long 97°03'31", in NE¼NW¼ sec.34, T.117 N., R.52 W., Codington County, Hydrologic Unit 10170202, on right bank 5 ft (2 m) downstream from bridge, 4.7 mi (7.6 km) upstream from mouth, and 2.8 mi (4.5 km) east of Watertown.

DRAINAGE AREA.--125 mi^2 (324 km^2), approximately.

PERIOD OF RECORD.--September 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,721.24 ft (524.634 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--11 years, 12.4 ft^3/s (0.351 m^3/s), 8,980 acre-ft/yr (11.1 hm^3/yr); median of yearly mean discharges, 5.8 ft^3/s (0.16 m^3/s), 4,200 acre-ft/yr (5.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,930 ft^3/s (83.0 m^3/s) Mar. 31, 1978, gage height, 7.02 ft (2.140 m); maximum gage height, 9.86 ft (3.005 m) Mar. 15, 1972 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 250 ft^3/s (7.08 m^3/s) at 1245 hours, Mar. 30, gage height, 5.39 ft (1.643 m), backwater from ice, no other peak above base of 200 ft^3/s (5.66 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.30	.51	.00	.00	19	68	2.1	11	.78	.56	.70
2	.01	.27	.52	.00	.00	17	36	2.1	5.3	.74	.35	.53
3	.02	.22	.48	.00	.00	14	24	2.1	2.9	.50	.14	.35
4	.18	.30	.52	.00	.00	11	21	1.9	2.2	.70	.04	.22
5	.47	.34	.50	.00	.00	8.5	15	2.4	1.9	1.1	.01	.23
6	.92	.24	.43	.00	.00	7.4	10	2.4	2.0	.92	.00	.24
7	.91	.22	.45	.00	.00	6.0	9.1	2.0	2.3	.46	.00	.24
8	.65	.21	.44	.00	.00	4.8	8.3	1.9	2.2	.45	.00	.24
9	.50	.13	.33	.00	.00	4.1	7.2	2.4	1.8	.28	.00	.28
10	.44	.08	.25	.00	.00	3.2	7.5	1.9	1.5	.28	.00	.37
11	.35	.12	.18	.00	.00	2.7	7.7	1.9	1.3	.36	.00	.36
12	.34	.17	.21	.00	.00	2.5	7.9	3.3	1.1	.40	.00	1.0
13	.75	.21	.31	.00	.00	4.5	8.6	3.9	1.0	.35	.00	1.3
14	1.4	.24	.32	.00	.00	12	10	3.6	1.0	.57	.02	1.1
15	1.1	.28	.28	.00	.00	25	9.8	5.0	.90	1.0	.18	1.4
16	.84	.25	.23	.00	.00	15	7.0	6.9	.86	.94	.24	1.1
17	.94	.16	.15	.00	.30	10	6.8	6.0	.86	.97	.19	.95
18	.75	.23	.04	.00	1.2	6.0	5.9	4.0	.86	.85	.13	.79
19	.64	.23	.00	.00	3.4	3.0	5.4	3.5	.86	.64	.06	.60
20	.61	.18	.02	.00	9.0	2.2	4.1	3.4	.82	.43	.02	.44
21	.51	.18	.09	.00	30	2.3	5.0	2.8	.70	.43	.01	.29
22	.44	.18	.10	.00	25	2.4	4.0	2.8	.70	.35	.00	.22
23	.40	.40	.07	.00	20	2.7	3.5	2.3	.66	.33	.00	.20
24	.41	.56	.04	.00	15	2.4	3.0	2.5	.62	.27	.08	.14
25	.49	.62	.04	.00	12	3.0	2.5	2.3	.70	.19	.14	.07
26	.46	.62	.02	.00	15	3.7	2.8	2.3	.66	.86	.13	.05
27	.42	.57	.05	.00	20	8.0	3.1	2.0	.82	1.1	.14	.05
28	.37	.46	.06	.00	22	15	2.4	1.8	.82	.96	.18	.09
29	.36	.42	.00	.00	---	120	2.4	7.7	.86	.87	.65	.38
30	.40	.43	.00	.00	---	200	2.4	5.3	.82	.76	.99	.38
31	.36	---	.00	.00	---	113	---	12	---	.68	.85	---
TOTAL	16.52	8.82	6.64	.00	172.90	650.4	310.4	106.5	50.02	19.52	5.11	14.31
MEAN	.53	.29	.21	.000	6.18	21.0	10.3	3.44	1.67	.63	.16	.48
MAX	1.4	.62	.52	.00	30	200	68	12	11	1.1	.99	1.4
MIN	.01	.08	.00	.00	.00	2.2	2.4	1.8	.62	.19	.00	.05
AC-FT	33	17	13	.00	343	1290	616	211	99	39	10	28

CAL YR 1981 TOTAL 293.01 MEAN .80 MAX 6.8 MIN .00 AC-FT 581
WTR YR 1982 TOTAL 1361.14 MEAN 3.73 MAX 200 MIN .00 AC-FT 2700

06479525 BIG SIOUX RIVER NEAR CASTLEWOOD, SD

LOCATION.--Lat 44°43'54", long 97°02'39", in SW¼SW¼ sec.26, T.115 N., R.52 W., Hamlin County, Hydrologic Unit 10170202, on right bank at upstream side of highway bridge on State Highway 22, 3.25 mi (5.2 km) east of intersection of U.S. Highway 81 and State Highway 22, and 1.0 mi (1.6 km) northwest of Castlewood.

DRAINAGE AREA.--1,592 mi^2 (4,123 km^2), approximately.

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,667.52 ft (508.260 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--6 years, 45.5 ft^3/s (1.289 m^3/s) 32,960 acre-ft/yr (40.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,740 ft^3/s (49.3 m^3/s) Mar. 31, 1978, gage height, 11.10 ft (3.383 m); maximum gage height, 11.24 ft (3.426 m) Apr. 13, 1979; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 380 ft^3/s (10.8 m^3/s) at 1230 hours, Mar. 31, gage height, 8.62 ft (2.627 m), backwater from ice, no peak above base of 450 ft^3/s (12.7 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	6.5	7.0	.60	.00	35	199	12	62	9.2	5.5	2.4
2	5.4	7.5	7.0	.55	.00	29	95	12	53	8.7	7.2	1.4
3	5.4	8.0	6.5	.45	.00	23	71	11	39	7.6	6.9	1.3
4	5.1	8.1	6.5	.40	.00	21	50	11	26	5.6	6.6	1.1
5	5.7	7.0	6.0	.35	.00	17	40	11	21	6.3	6.2	.56
6	6.0	6.0	5.5	.30	.00	15	30	10	25	6.5	5.8	.84
7	8.0	5.5	5.0	.27	.00	12	26	10	32	7.3	4.8	.98
8	7.3	5.4	4.5	.25	.00	11	24	10	27	8.1	3.8	.84
9	6.0	5.6	4.5	.22	.00	10	22	10	23	5.4	4.5	.84
10	5.7	5.8	4.5	.20	.00	10	20	14	21	5.9	5.3	1.1
11	6.3	6.0	4.3	.16	.00	10	18	15	19	7.4	5.2	.84
12	6.6	6.0	4.2	.10	.00	10	17	20	18	6.4	4.7	3.0
13	6.7	6.0	4.2	.06	.00	11	16	25	16	6.9	5.5	6.6
14	9.1	5.7	4.1	.02	.00	13	16	23	15	8.5	5.1	3.8
15	8.8	5.2	4.1	.00	.00	15	16	29	11	10	4.0	3.9
16	6.8	5.0	3.8	.00	.25	22	16	29	10	9.6	3.8	6.7
17	7.8	5.5	3.4	.00	.60	20	16	26	13	9.2	3.9	4.2
18	6.3	7.0	3.0	.00	1.3	17	15	25	11	5.7	3.6	4.3
19	7.0	10	2.6	.00	2.8	13	15	20	9.9	3.9	2.8	4.1
20	5.4	15	2.5	.00	2.5	12	15	17	9.3	3.0	2.7	3.8
21	5.5	13	2.5	.00	5.0	12	14	14	9.1	2.8	3.8	4.6
22	5.6	12	2.4	.00	8.0	11	14	14	8.2	2.4	2.8	5.5
23	5.2	11	2.1	.00	16	11	14	12	10	2.3	3.0	4.8
24	6.3	10	1.8	.00	35	11	14	12	12	2.2	6.0	5.1
25	6.7	9.5	1.5	.00	71	11	14	12	9.1	3.1	6.2	5.0
26	6.8	8.5	1.3	.00	60	11	13	13	9.8	5.5	3.8	4.8
27	6.2	8.0	1.1	.00	50	11	13	12	8.5	9.6	2.5	5.2
28	7.4	8.0	.95	.00	42	13	12	11	6.5	6.7	2.6	5.2
29	7.1	7.5	.80	.00	---	30	12	13	6.6	5.2	5.4	4.6
30	6.8	7.5	.70	.00	---	100	12	46	8.1	4.3	6.2	6.3
31	6.2	---	.65	.00	---	350	---	64	---	4.2	4.1	---
TOTAL	198.8	231.8	109.00	3.93	294.45	897	869	563	549.1	189.5	144.3	103.70
MEAN	6.41	7.73	3.52	.13	10.5	28.9	29.0	18.2	18.3	6.11	4.65	3.46
MAX	9.1	15	7.0	.60	71	350	199	64	62	10	7.2	6.7
MIN	3.6	5.0	.65	.00	.00	10	12	10	6.5	2.2	2.5	.56
AC-FT	394	460	216	7.8	584	1780	1720	1120	1090	376	286	206

CAL YR 1981 TOTAL 4093.80 MEAN 11.2 MAX 98 MIN .65 AC-FT 8120
WTR YR 1982 TOTAL 4153.58 MEAN 11.4 MAX 350 MIN .00 AC-FT 8240

06479529 STRAY HORSE CREEK NEAR CASTLEWOOD, SD

LOCATION.--Lat 44°43'52", long 96°57'23", in NE¼NE¼NW¼ sec.33, T.115 N., R.51 W., Hamlin County, Hydrologic Unit 10170202, on right bank at downstream side of bridge on State Highway 22, 3.5 mi (5.6 km) east of Castlewood, 6.4 mi (10.3 km) upstream from mouth, and 7.0 mi (11.3 km) north of Dempster.

DRAINAGE AREA.--73.7 mi^2 (191 km^2), approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,703.88 ft (519.343 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--14 years, 10.8 ft^3/s (0.306 m^3/s), 7,820 acre-ft/yr (9.64 hm^3/yr); median of yearly mean discharges, 7.2 ft^3/s (0.20 m^3/s), 5,200 acre-ft/yr (6.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft^3/s (396 m^3/s) Apr. 7, 1969, gage height, 14.65 ft (4.465 m), from rating curve extended above 3,500 ft^3/s (99.1 m^3/s) on basis of contracted-opening measurement of peak flow; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 370 ft^3/s (10.5 m^3/s) Mar. 29, gage height, 8.00 ft (2.438 m), backwater from ice, no other peak above base of 175 ft^3/s (4.96 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	.18	.30	.00	.00	14	40	1.5	20	.68	.08	.61
2	.01	.18	.30	.00	.00	9.0	24	1.3	15	.59	.01	.40
3	.02	.21	.34	.00	.00	7.0	16	1.1	10	.57	.03	.28
4	.19	.19	.35	.00	.00	5.0	11	1.0	6.0	.44	.07	.25
5	.32	.17	.34	.00	.00	3.0	7.4	.80	5.0	.34	.03	.27
6	.35	.16	.31	.00	.00	2.0	5.6	.82	40	.33	.00	.21
7	.23	.11	.29	.00	.00	1.5	5.2	.64	25	.46	.01	.13
8	.14	.12	.25	.00	.00	1.2	4.5	.70	15	.55	.03	.14
9	.18	.08	.24	.00	.00	1.0	4.0	.80	10	.53	.00	.22
10	.14	.14	.22	.00	.00	2.0	4.0	1.5	7.6	.56	.07	.24
11	.08	.13	.21	.00	.00	4.0	4.7	1.5	5.9	.56	.05	.24
12	.07	.08	.19	.00	.00	8.0	5.4	4.0	5.0	.45	.05	.55
13	.16	.11	.21	.00	.00	18	6.0	16	3.7	.38	.08	.61
14	.34	.10	.21	.00	.00	30	5.0	10	3.5	.31	.03	.52
15	.50	.06	.18	.00	.00	40	7.0	19	3.4	.46	.02	.54
16	.51	.09	.17	.00	.00	30	6.0	15	2.8	.64	.01	.45
17	.45	.11	.17	.00	.00	20	4.5	11	4.1	.61	.00	.45
18	.45	.16	.13	.00	.00	15	3.7	8.7	2.8	.42	.00	.41
19	.38	.24	.09	.00	.00	10	4.6	6.4	2.3	.32	.00	.34
20	.34	.24	.08	.00	10	8.0	3.8	4.9	2.0	.23	.00	.26
21	.29	.17	.04	.00	30	6.6	3.3	4.1	1.8	.26	.00	.26
22	.20	.20	.02	.00	28	5.0	2.9	3.1	1.4	.25	.00	.29
23	.17	.34	.00	.00	50	6.0	2.5	2.6	1.2	.16	.00	.31
24	.20	.38	.00	.00	23	5.5	2.7	2.1	1.6	.03	.19	.27
25	.23	.31	.00	.00	20	5.2	2.6	2.3	1.6	.02	.15	.11
26	.21	.24	.00	.00	23	5.0	2.2	1.7	1.1	.24	.08	.09
27	.26	.24	.00	.00	15	5.0	2.0	2.0	1.0	.29	.05	.08
28	.26	.21	.00	.00	10	100	2.0	2.0	.87	.33	.00	.12
29	.24	.19	.00	.00	---	330	1.5	7.0	.82	.22	.95	.21
30	.28	.22	.00	.00	---	290	1.5	50	.82	.11	1.5	.14
31	.23	---	.00	.00	---	130	---	30	---	.03	.93	---
TOTAL	7.55	5.36	4.64	.00	209.00	1117.0	195.6	213.56	201.31	11.37	4.42	9.00
MEAN	.24	.18	.15	.000	7.46	36.0	6.52	6.89	6.71	.37	.14	.30
MAX	.51	.38	.35	.00	50	330	40	50	40	.68	1.5	.61
MIN	.01	.06	.00	.00	.00	1.0	1.5	.64	.82	.02	.00	.08
AC-FT	15	11	9.2	.00	415	2220	388	424	399	23	8.8	18

CAL YR 1981 TOTAL 285.27 MEAN .67 MAX 82 MIN .00 AC-FT 486
WTR YR 1982 TOTAL 1978.81 MEAN 5.42 MAX 330 MIN .00 AC-FT 3920

06479640 HIDEWOOD CREEK NEAR ESTELLINE, SD

LOCATION.--Lat 44°36'42", long 96°54'17", in SW¼NW¼ sec.12, T.113 N., R.51 W., Hamlin County, Hydrologic Unit 10170202, on left bank at upstream side of highway bridge, 2.7 mi (4.3 km) north of Estelline, 2.8 mi (4.5 km) southeast of Dempster, and 4.7 mi (7.6 km) upstream from mouth.

DRAINAGE AREA.--164 mi^2 (425 km^2), approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,665 ft (507 m).

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--14 years, 22.9 ft^3/s (0.649 m^3/s), 16,590 acre-ft/yr (20.5 hm^3/yr); median of yearly mean discharges, 17 ft^3/s (0.48 m^3/s), 12,300 acre-ft/yr (15 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,630 ft^3/s (103 m^3/s) Apr. 7, 1969, gage height, 11.36 ft (3.463 m); maximum gage height, 11.55 ft (3.520 m) Apr. 8, 1969 (backwater from collapsed bridge), no flow at times in 1969, 1971, 1974-77, 1981, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft^3/s (8.50 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 14	1600	320	9.06	a*6.78	2.067	Mar. 30	1800	*588	16.7	6.48	1.975

a Backwater from ice.
No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	10	110	6.0	9.2	3.7	.93	1.4
2	.00	.00	.00	.00	.00	240	57	5.5	6.0	3.0	.93	.59
3	.00	.00	.00	.00	.00	240	45	5.3	4.1	2.6	.93	.27
4	.00	.00	.00	.00	.00	180	36	5.1	3.0	2.8	.93	.22
5	.00	.00	.00	.00	.00	150	27	4.9	3.2	4.8	.93	.17
6	.00	.00	.00	.00	.00	100	25	4.5	7.4	5.1	.69	.12
7	.00	.00	.00	.00	.00	100	27	4.1	25	12	.69	.04
8	.00	.00	.00	.00	.00	105	29	3.8	11	26	.49	.02
9	.00	.00	.00	.00	.00	100	17	3.7	7.4	12	.34	.00
10	.00	.00	.00	.00	.00	105	14	4.5	4.8	8.6	.34	.00
11	.00	.00	.00	.00	.00	115	10	5.3	3.5	7.1	.34	.00
12	.00	.00	.00	.00	.00	135	11	5.7	3.0	5.8	.34	.22
13	.00	.00	.00	.00	.00	200	11	12	3.2	4.3	.34	.12
14	.00	.00	.00	.00	.00	290	10	13	4.1	3.5	.34	.12
15	.00	.00	.00	.00	.00	270	12	17	4.1	5.1	.27	.07
16	.00	.00	.00	.00	.00	180	10	15	5.1	4.1	.22	.07
17	.00	.00	.00	.00	.00	140	9.2	13	4.1	6.0	.22	.07
18	.00	.00	.00	.00	.00	110	10	12	4.3	6.5	.17	.04
19	.00	.00	.00	.00	.00	50	10	10	4.3	5.5	.12	.02
20	.00	.00	.00	.00	.00	55	9.8	8.5	4.1	4.1	.07	.02
21	.00	.00	.00	.00	.00	65	9.5	7.4	5.1	3.3	.02	.01
22	.00	.00	.00	.00	.00	40	9.2	6.8	5.1	2.8	.02	.00
23	.00	.00	.00	.00	.00	40	9.0	6.1	4.1	2.2	.02	.00
24	.00	.00	.00	.00	.00	30	8.5	5.6	2.4	1.9	.17	.00
25	.00	.00	.00	.00	.00	22	8.2	5.9	3.2	1.7	.12	.00
26	.00	.00	.00	.00	.00	19	7.2	5.6	2.8	2.2	.27	.00
27	.00	.00	.00	.00	.00	17	6.5	5.5	2.2	2.2	.02	.00
28	.00	.00	.00	.00	.00	12	6.2	5.3	2.4	1.9	.00	.00
29	.00	.00	.00	.00	---	90	5.9	5.3	3.3	1.5	.41	.00
30	.00	.00	.00	.00	---	250	6.2	3.9	4.3	1.0	1.0	.00
31	.00	---	.00	.00	---	280	---	6.8	---	.93	1.0	---
TOTAL	.00	.00	.00	.00	.00	3740	566.4	223.1	155.8	154.23	12.68	3.59
MEAN	.000	.000	.000	.000	.000	121	18.9	7.20	5.19	4.98	.41	.12
MAX	.00	.00	.00	.00	.00	290	110	17	25	26	1.0	1.4
MIN	.00	.00	.00	.00	.00	10	5.9	3.7	2.2	.93	.00	.00
AC-FT	.00	.00	.00	.00	.00	7420	1120	443	309	306	25	7.1

CAL YR 1981 TOTAL 515.90 MEAN 1.41 MAX 29 MIN .00 AC-FT 1020
WTR YR 1982 TOTAL 4855.80 MEAN 13.3 MAX 290 MIN .00 AC-FT 9630

06479980 MEDARY CREEK NEAR BROOKINGS, SD

LOCATION.--Lat 44°13'27", long 96°46'06", in NE¼NE¼NE¼ sec.25, T.109 N., R.50 W., Brookings County, Hydrologic Unit 10170202, on right bank 400 ft (122 m) downstream from county highway bridge, 5.2 mi (8.4 km) downstream from Deer Creek, 4.1 mi (6.6 km) upstream from mouth, and 6.1 mi (9.8 km) southeast of Brookings.

DRAINAGE AREA.--232 mi^2 (601 km^2).

PERIOD OF RECORD.--October 1980 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 1,570.20 ft (478.597 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 20 ft^3/s (0.566 m^3/s) Apr. 14, 15; maximum gage height, 3.73 ft (1.137 m) Mar. 3; no flow for many days.

REVISIONS.--The period of record, maximum discharge, and daily discharges for April and May 1981 are incorrect in report SD-81-1. The corrected period of record and revised discharges are given herein. These figures supersede those published in report SD-81-1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	2.7	1.7	1.1	2.0	7.3	16	7.3	1.2	.00	1.6	1.0
2	2.2	2.7	1.3	1.1	1.5	7.7	17	8.9	1.5	.00	1.5	.90
3	2.3	2.6	1.5	1.0	1.4	19	17	8.6	1.4	.08	1.5	.90
4	2.5	2.6	1.9	.97	1.2	13	17	7.6	1.2	.17	1.5	.66
5	2.7	2.7	2.2	.96	1.1	11	17	7.1	1.1	.00	1.3	.66
6	2.9	2.7	2.1	.94	.98	7.7	16	6.5	.87	.00	1.1	.78
7	2.8	2.5	1.9	.91	1.0	6.2	15	5.4	.93	.00	.89	1.0
8	2.8	2.5	1.7	.89	1.1	5.6	15	4.9	.68	.00	.85	.54
9	2.7	2.6	1.5	.88	.72	5.8	14	4.0	.62	.00	.88	.42
10	2.6	2.5	1.3	.94	.68	4.8	14	3.8	.96	.00	.74	.30
11	2.6	2.5	1.4	1.1	.40	4.5	13	3.6	1.1	.00	.54	.10
12	2.8	2.3	1.6	1.2	.00	4.6	14	3.2	1.3	.00	.54	.00
13	3.0	2.5	1.7	1.1	.68	4.2	18	3.0	1.8	.00	.42	.00
14	3.3	2.5	1.8	1.0	1.9	3.7	20	2.8	2.2	.14	2.2	.00
15	3.4	2.6	1.9	.73	2.4	3.8	20	2.6	2.0	.14	1.5	.00
16	4.0	2.7	2.0	.71	2.5	3.6	19	2.6	1.9	.00	.96	.10
17	3.8	2.5	1.9	.66	4.7	3.4	17	2.2	1.9	.00	.78	.10
18	3.2	2.5	1.4	.64	6.0	3.1	16	2.2	1.5	.00	.77	.10
19	3.0	2.8	1.0	.68	7.1	3.2	16	1.8	1.3	.00	.65	.00
20	2.9	2.8	.90	.77	6.2	3.6	15	1.7	1.3	.67	.54	.00
21	2.7	2.6	.95	.93	15	3.5	14	1.6	1.3	1.6	.42	.00
22	2.8	2.8	.98	1.0	7.4	3.2	15	1.7	1.3	4.2	.53	.00
23	2.8	2.8	.85	1.1	6.1	3.1	15	1.6	1.0	7.9	.90	.00
24	2.7	2.8	.80	1.4	5.1	3.3	15	1.6	1.1	2.9	1.4	.00
25	2.6	2.7	.76	1.4	4.6	3.5	14	1.7	.70	2.2	1.8	.10
26	2.7	2.6	.82	1.5	4.7	3.5	13	1.7	.31	1.8	1.5	.42
27	2.7	2.6	.80	1.5	7.9	3.6	12	1.8	.40	1.5	1.3	.20
28	4.1	2.7	1.0	1.5	7.6	4.0	11	1.8	.40	1.5	1.1	.10
29	3.3	2.4	1.1	1.4	---	10	11	2.0	.38	1.4	1.1	.10
30	2.8	2.8	1.2	1.7	---	14	7.9	1.6	.00	1.4	1.1	.10
31	2.7	---	1.2	1.7	---	15	---	1.2	---	1.4	1.1	---
TOTAL	89.7	78.6	43.16	33.41	101.96	192.5	453.9	108.1	33.65	29.00	33.01	8.58
MEAN	2.89	2.62	1.39	1.08	3.64	6.21	15.1	3.49	1.12	.94	1.06	.29
MAX	4.1	2.8	2.2	1.7	15	19	20	8.9	2.2	7.9	2.2	1.0
MIN	2.2	2.3	.76	.64	.00	3.1	7.9	1.2	.00	.00	.42	.00
AC-FT	178	156	86	66	202	382	900	214	67	58	65	17

WTR YR 1981 TOTAL 1205.57 MEAN 3.30 MAX 20 MIN .00 AC-FT 2390

06479980 MEDARY CREEK NEAR BROOKINGS, SD

LOCATION.--Lat 44°13'27", long 96°46'06", in NE¼NE¼NE¼ sec.25, T.109 N., R.50 W., Brookings County, Hydrologic Unit 10170202, on right bank 400 ft (122 m) downstream from county highway bridge, 5.2 mi (8.4 km) downstream from Deer Creek, 4.1 mi (6.6 km) upstream from mouth, and 6.1 mi (9.8 km) southeast of Brookings.

DRAINAGE AREA.--232 mi² (601 km²).

PERIOD OF RECORD.--October 1980 to current year.

REVISED RECORDS.--WRD SD-82-1: 1981.

GAGE.--Water-stage recorder. Datum of gage is 1,570.20 ft (478.597 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 80 ft³/s (2.27 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 22	2345	ice jam		*7.11	2.167
Mar. 16	2345	*192	5.44	6.62	2.018
Mar. 31	1400	182	5.15	6.45	1.966
Apr. 14	0515	91	2.58	4.93	1.503
July 16	1330	167	4.73	6.20	1.890
July 21	1345	146	4.13	5.85	1.783

No flow Jan. 6-15, 31, Feb. 1-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.66	.80	.01	.00	19	123	19	37	7.1	22	4.2
2	.10	.78	.75	.01	.00	17	80	18	35	6.8	19	4.2
3	.11	.90	.70	.01	.00	15	57	16	31	6.2	17	4.4
4	.27	2.6	.70	.01	.00	14	57	16	27	5.9	16	5.3
5	.43	.78	.70	.01	.00	13	42	15	23	5.1	15	4.4
6	.57	.66	.75	.00	.01	12	45	14	27	7.6	13	4.8
7	.38	.66	.75	.00	.03	12	40	13	28	17	12	4.5
8	.29	.75	.75	.00	.03	13	35	13	28	37	11	4.7
9	.20	.78	.70	.00	.02	15	35	12	36	40	9.5	4.6
10	.26	.77	.70	.00	.02	25	33	14	39	28	8.8	4.8
11	.28	.78	.70	.00	.05	35	33	16	41	22	8.3	4.4
12	.41	.78	.75	.00	.30	50	39	18	39	19	7.7	5.4
13	1.0	.85	.75	.00	.50	80	51	21	30	17	7.4	6.5
14	1.6	1.0	.70	.00	1.0	131	62	24	25	15	6.9	6.8
15	1.1	1.1	.70	.00	2.0	136	52	32	26	66	6.3	7.3
16	.91	.90	.65	.01	4.0	164	45	35	26	133	6.1	7.6
17	1.4	.90	.50	.03	5.0	159	42	37	24	108	5.6	8.6
18	1.4	.85	.35	.03	6.0	109	41	35	24	86	5.1	8.2
19	1.3	.80	.25	.02	8.0	82	42	33	22	95	4.4	7.9
20	1.1	.75	.30	.02	13	59	40	31	20	81	4.1	7.3
21	.90	.80	.30	.02	20	57	38	28	19	102	3.6	6.8
22	.71	.85	.25	.01	25	50	37	26	17	87	3.3	7.1
23	.66	.90	.25	.01	23	43	36	22	16	69	3.0	7.1
24	.66	.90	.20	.01	20	42	35	20	15	66	3.8	6.8
25	.78	.90	.20	.01	18	40	32	19	12	64	3.1	6.5
26	.78	.85	.10	.02	18	41	30	19	11	53	2.7	5.9
27	.79	.80	.10	.04	19	46	27	20	10	44	2.4	5.9
28	.78	.80	.05	.03	20	48	24	19	9.6	37	2.4	5.7
29	.78	.85	.05	.01	---	54	22	17	8.6	32	3.3	9.9
30	.78	.80	.05	.01	---	66	20	20	7.6	30	3.4	10
31	.78	---	.03	.00	---	105	---	34	---	26	5.0	---
TOTAL	21.66	26.50	14.53	.33	202.96	1792	1295	676	713.8	1412.7	241.2	187.6
MEAN	.70	.88	.47	.011	7.25	57.8	43.2	21.8	23.8	45.6	7.78	6.25
MAX	1.6	2.6	.80	.04	25	164	123	37	41	133	22	10
MIN	.10	.66	.03	.00	.00	12	20	12	7.6	5.1	2.4	4.2
AC-FT	43	53	29	.7	403	3550	2570	1340	1420	2800	478	372

CAL YR 1981 TOTAL 1056.80 MEAN 2.90 MAX 20 MIN .00 AC-FT 2100
WTR YR 1982 TOTAL 6584.28 MEAN 18.0 MAX 164 MIN .00 AC-FT 13060

06480000 BIG SIOUX RIVER NEAR BROOKINGS, SD

LOCATION.--Lat 44°10'48", long 96°44'55", in NW¼NW¼ sec.8, T.108 N., R.49 W., Moody County, Hydrologic Unit 10170203, on right bank 3 ft (1 m) downstream from highway bridge, 2.2 mi (3.5 km) downstream from Medary Creek and 9.5 mi (15.3 km) southeast of Brookings.

DRAINAGE AREA.--4,420 mi² (11,450 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

PERIOD OF RECORD.--August 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,551.91 ft (473.022 m) National Geodetic Vertical Datum of 1929. Prior to May 30, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 156 ft³/s (4.418 m³/s), 113,000 acre-ft/yr (139 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,900 ft³/s (960 m³/s) Apr. 9, 1969, gage height, 14.77 ft (4.502 m); no flow at times in 1956, 1959, 1976, 1977, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 718 ft³/s (20.3 m³/s) at 2100 hours, Apr. 1, gage height, 6.04 ft (1.841 m), no peak above base of 1,000 ft³/s (28.3 m³/s); maximum gage height, 6.76 ft (2.060 m) Mar. 18 (backwater from ice); no flow Jan. 14 to Feb. 16.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Dec. 11 to Mar. 26, Apr. 4-7)

1.6	3	3.0	145
1.7	7	4.0	288
2.0	35	5.0	483
2.5	86	6.0	697

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	14	24	4.2	.00	440	622	96	163	41	72	24
2	5.5	13	22	3.8	.00	380	329	90	165	40	64	22
3	6.1	15	24	3.6	.00	330	325	83	157	39	58	23
4	6.2	14	29	3.3	.00	290	310	79	145	36	56	31
5	6.5	13	26	3.0	.00	250	290	77	130	35	51	33
6	6.8	12	23	2.8	.00	210	260	72	132	41	46	31
7	6.9	18	22	2.5	.00	190	240	69	142	50	43	27
8	7.2	19	20	2.2	.00	170	281	67	133	58	39	25
9	6.6	21	19	2.0	.00	150	244	63	145	62	36	25
10	6.6	18	18	1.7	.00	150	251	67	173	56	34	24
11	6.5	16	16	1.3	.00	170	235	77	161	60	32	23
12	6.2	18	15	.90	.00	200	259	78	147	59	30	22
13	9.8	30	14	.50	.00	250	298	90	131	53	29	23
14	18	34	13	.00	.00	320	315	95	122	48	29	24
15	20	20	12	.00	.00	390	294	115	123	321	28	27
16	16	22	11	.00	.00	480	275	135	113	308	27	28
17	16	36	10	.00	.20	540	261	145	104	306	25	26
18	17	20	9.8	.00	.60	640	247	143	98	260	23	25
19	17	16	9.4	.00	1.3	600	238	133	88	265	22	24
20	16	29	8.7	.00	2.0	530	228	123	78	286	21	25
21	15	30	8.3	.00	3.0	480	216	113	71	344	20	23
22	14	39	7.8	.00	50	430	203	105	65	381	19	22
23	13	39	7.4	.00	240	420	190	96	59	331	18	21
24	13	16	7.0	.00	280	360	177	88	56	276	23	20
25	13	14	6.6	.00	240	220	162	84	56	249	22	19
26	14	31	6.2	.00	210	185	143	87	52	206	21	19
27	14	26	5.8	.00	320	172	128	87	48	164	18	18
28	14	30	5.5	.00	500	160	118	94	46	138	17	17
29	14	21	5.1	.00	---	216	109	79	44	116	18	16
30	18	22	4.7	.00	---	241	103	83	43	98	22	15
31	14	---	4.5	.00	---	409	---	129	---	88	26	---
TOTAL	361.2	666	414.8	31.80	1847.10	9973	7351	2932	3190	4811	989	702
MEAN	11.7	22.2	13.4	1.03	66.0	320	245	94.6	106	155	31.9	23.4
MAX	20	39	29	4.2	500	640	622	145	173	381	72	33
MIN	4.3	12	4.5	.00	.00	150	103	63	43	35	17	15
AC-FT	716	1320	823	63	3660	19700	14580	5820	6330	9540	1960	1390

CAL YR 1981 TOTAL 8605.20 MEAN 23.6 MAX 124 MIN 3.6 AC-FT 17070
WTR YR 1982 TOTAL 33228.90 MEAN 91.0 MAX 640 MIN .00 AC-FT 65910

06480650 FLANDREAU CREEK ABOVE FLANDREAU, SD

LOCATION.--Lat 44°03'45", long 96°29'15", in SE¼NE¼NE¼ sec.20, T.107 N., R.47 W., Moody County, Hydrologic Unit 10170203, on right bank 500 ft (152 m) downstream from county highway bridge, 5.9 mi (9.5 km) upstream from mouth and 5.2 mi (8.4 km) east of Flandreau.

DRAINAGE AREA.--100 mi^2 (262 km^2).

PERIOD OF RECORD.--Oct. 1, 1981, to Sept. 30, 1982.

GAGE.--Water-stage recorder. Altitude of gage is 1,555 ft (474 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.25 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)			(ft^3/s)	(m^3/s)	(ft)	(m)
Feb. 24	--	250	7.08	ice jam		Mar. 30	0915	156	4.42	3.94	1.811
Mar. 2	--	230	6.51	ice jam		July 15	1900	*1080	30.6	*9.01	2.746
Mar. 15	--	260	7.36	ice jam							

No flow Oct. 8, Feb. 3-19.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Jan. 5; stage-discharge relation affected by ice Jan. 6 to Mar. 27)

3.3	0	3.9	6.4	5.0	57	7.0	360
3.5	1.4	4.2	14	5.5	102	8.0	660
3.7	3.4	4.5	26	6.0	165		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	2.5	2.6	1.5	.20	140	72	10	25	3.0	7.1	16
2	.26	2.4	1.4	1.4	.14	200	49	9.6	27	3.0	6.1	32
3	.25	2.2	2.9	1.4	.00	130	33	9.3	18	2.9	5.3	28
4	.32	2.2	2.4	1.3	.00	120	49	8.5	13	2.7	5.2	17
5	.27	2.2	1.9	1.2	.00	94	32	8.0	11	2.7	4.6	12
6	.12	1.9	1.8	1.0	.00	74	26	8.3	10	5.2	3.9	10
7	.18	1.9	1.8	.90	.00	58	25	8.1	9.9	82	3.7	8.5
8	.00	1.9	2.0	.75	.00	47	20	8.0	10	89	3.4	7.4
9	.02	2.1	2.6	.55	.00	39	19	8.3	9.9	87	3.1	6.6
10	.51	2.0	2.8	.46	.00	41	19	8.4	9.0	66	2.8	6.2
11	.86	2.0	2.8	.40	.00	56	22	9.8	8.8	44	2.7	5.7
12	1.1	1.9	3.0	.36	.00	80	81	12	8.1	25	2.5	6.0
13	1.7	2.0	2.9	.34	.00	110	83	13	7.1	17	2.6	5.7
14	2.4	2.1	2.7	.30	.00	160	56	20	7.5	13	2.6	6.4
15	2.1	2.2	2.6	.26	.00	230	42	28	9.4	407	2.5	7.8
16	2.9	2.2	2.5	.20	.00	150	43	40	14	578	2.4	8.2
17	3.5	2.2	2.4	.16	.00	105	75	38	21	282	2.4	8.6
18	3.4	2.4	2.3	.20	.00	80	62	30	17	135	2.2	8.4
19	3.1	2.2	2.3	.24	.00	60	38	31	12	80	2.1	7.4
20	4.4	2.6	2.2	.22	.20	50	31	27	8.8	53	2.1	5.9
21	3.8	2.2	2.1	.25	3.0	40	30	19	7.6	39	1.8	4.9
22	3.1	1.7	2.2	.23	9.0	35	30	16	6.4	42	1.6	4.8
23	2.8	1.9	2.1	.23	42	30	30	13	5.5	53	1.6	4.4
24	2.8	1.9	2.0	.28	220	40	24	12	4.9	45	3.3	4.2
25	2.7	1.8	1.9	.32	140	65	20	11	4.6	30	5.4	3.9
26	2.5	3.4	1.8	.34	165	80	16	11	4.1	20	8.2	3.6
27	2.7	3.9	1.7	.36	103	55	14	11	3.8	16	9.2	3.4
28	2.9	4.0	1.8	.34	96	49	13	13	3.6	13	7.2	3.3
29	2.8	3.9	1.6	.36	---	71	11	12	3.4	11	5.5	3.5
30	2.8	3.4	1.6	.36	---	131	9.7	14	3.3	9.2	4.8	3.7
31	2.6	---	1.6	.24	---	115	---	17	---	8.0	7.8	---
TOTAL	59.02	71.2	68.3	16.45	778.54	2735	1074.7	484.3	303.7	2263.7	125.7	253.5
MEAN	1.90	2.37	2.20	.53	27.8	88.2	35.8	15.6	10.1	73.0	4.05	8.45
MAX	4.4	4.0	3.0	1.5	220	230	83	40	27	578	9.2	32
MIN	.00	1.7	1.4	.16	.00	30	9.7	8.0	3.3	2.7	1.6	3.3
AC-FT	117	141	135	33	1540	5420	2130	961	602	4490	249	503

WTR YR 1982 TOTAL 8234.11 MEAN 22.6 MAX 578 MIN .00 AC-FT 16330

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD

LOCATION.--Lat 43°47'25", long 96°44'42", in NW¼NW¼ sec.29, T.104 N., R.49 W., Minnehaha County, Hydrologic Unit 10170203, on left bank at downstream side of highway bridge, 0.2 mi (0.3 km) downstream from confluence of divided channels and 3.0 mi (4.8 km) southwest of Dell Rapids.

DRAINAGE AREA.--5,060 mi² (13,100 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1948 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,455.99 ft (443.786 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 11, 1949, nonrecording gage and Nov. 11, 1949, to Sept. 30, 1951, water-stage recorder, at present site at datum 0.04 ft (0.012 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--34 years, 249 ft³/s (7.052 m³/s), 180,400 acre-ft/yr (222 hm³/yr); median of yearly mean discharges, 190 ft³/s (5.38 m³/s), 138,000 acre-ft/yr (170 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,300 ft³/s (1,170 m³/s) Apr. 9, 1969, gage height, 16.47 ft (5.020 m); no flow Aug. 25 to Oct. 17, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
July 17	1330	*2740	77.6	*10.27	3.130	Aug. 4	1100	1630	46.2	7.94	2.420

Minimum daily discharge, 1.0 ft³/s (0.028 m³/s) Feb. 13.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 22)

2.4	7.9	3.2	51	6.0	875
2.7	18	3.5	109	9.0	2050
2.9	26	4.0	230	11.0	3370

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	19	22	8.3	3.4	550	564	179	158	79	172	120
2	11	19	21	7.6	3.1	800	570	198	178	71	160	65
3	12	19	23	6.8	2.9	600	598	182	198	66	175	54
4	12	19	23	6.1	2.7	490	637	148	218	65	658	59
5	12	18	21	5.5	2.4	410	620	132	221	59	182	69
6	12	18	21	4.8	2.2	350	530	132	208	73	146	65
7	13	19	22	4.4	1.9	310	470	125	195	87	132	63
8	15	18	22	3.8	1.7	270	400	123	180	222	123	69
9	17	19	21	3.5	1.5	230	320	134	165	220	107	73
10	17	20	21	3.0	1.4	200	294	131	182	185	96	83
11	17	19	21	2.6	1.3	180	281	117	178	165	91	66
12	19	20	22	2.3	1.2	250	300	120	200	144	87	65
13	19	20	22	1.9	1.0	350	407	127	192	127	83	65
14	19	20	22	1.5	1.2	520	444	139	215	125	81	66
15	19	16	21	1.2	2.2	740	448	165	208	292	83	69
16	19	16	21	1.3	2.8	630	468	188	189	1240	79	75
17	20	16	21	2.2	4.0	600	401	198	175	2580	77	79
18	19	17	21	3.8	8.0	560	392	215	165	1630	77	79
19	20	17	21	5.6	17	640	383	220	158	827	75	75
20	18	18	21	5.6	36	740	339	210	147	560	75	71
21	18	18	21	5.2	40	560	325	192	137	511	75	69
22	17	19	20	4.5	46	430	314	181	125	479	77	85
23	18	19	19	4.0	100	460	328	170	130	503	59	65
24	19	20	18	3.7	250	540	303	178	111	468	59	66
25	19	21	16	3.5	460	640	268	196	98	412	61	66
26	20	21	15	3.8	420	640	252	160	85	360	63	65
27	20	21	14	5.0	400	606	225	158	81	319	53	60
28	21	21	12	7.4	450	488	228	150	83	283	62	60
29	21	22	11	5.4	---	383	194	146	77	244	66	54
30	21	22	10	4.4	---	432	182	154	83	218	62	54
31	20	---	9.2	3.8	---	598	---	162	---	188	71	---
TOTAL	539	571	595.2	132.5	2263.9	15197	11485	5030	4740	12802	3467	2074
MEAN	17.4	19.0	19.2	4.27	80.9	490	383	162	158	413	112	69.1
MAX	21	22	23	8.3	460	800	637	220	221	2580	658	120
MIN	11	16	9.2	1.2	1.0	180	182	117	77	59	53	54
AC-FT	1070	1130	1180	263	4490	30140	22780	9980	9400	25390	6880	4110

CAL YR 1981 TOTAL 12625.2 MEAN 34.6 MAX 105 MIN 9.2 AC-FT 25040
WTR YR 1982 TOTAL 58896.6 MEAN 161 MAX 2580 MIN 1.0 AC-FT 116800

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-62, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1970, October 1973 to current year.
WATER TEMPERATURES: October 1967 to September 1971, October 1974 to September 1975, October 1979 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1967 to September 1976.

REMARKS.--There are many days of no samples during the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,100 micromhos Jan. 27, 1977; minimum daily, 140 micromhos Apr. 9, 1969.
WATER TEMPERATURES: Maximum daily, 33.5°C July 7, 12, 16, 20, 1974; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 619 mg/L Apr. 19, 1974; minimum daily mean, 0 mg/L Aug. 25 to Sept. 30, 1976.
SEDIMENT LOADS: Maximum daily, 40,600 tons (36,800 tonnes) Apr. 9, 1969; minimum daily, 0 ton (0 tonne) Aug. 8, 9, 14, Aug. 24 to Sept. 30, 1976.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed daily, 1,450 micromhos Jan. 12; minimum observed daily, 240 micromhos July 17.
WATER TEMPERATURES: Maximum observed daily, 29.0°C July 22, 25; minimum observed daily, 0.0°C on several days during winter.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
OCT									
27...	1400	20	880	8.2	9.0	370	190	79	42
NOV									
16...	1400	16	870	8.5	8.0	425	245	91	48
DEC									
17...	1500	21	850	8.2	1.0	377	207	72	48
JAN									
28...	1230	7.3	1470	7.8	1.5	689	379	159	71
MAR									
23...	1630	455	460	7.2	2.0	153	43	38	14
APR									
29...	1000	203	880	8.4	11.5	431	221	100	44
MAY									
14...	0930	140	870	8.2	16.0	412	182	94	43
JUN									
15...	1230	200	840	8.3	20.0	419	176	97	43
JUL									
16...	1100	1340	540	8.1	26.5	245	88	60	23
AUG									
12...	1000	85	760	7.4	19.0	362	153	79	40
SEP									
09...	0915	68	790	8.0	13.0	350	163	76	39

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
27...	38	18	.9	6.0	180	220	26	.3	3.2
NOV									
16...	51	20	1.1	6.7	186	240	51	.3	4.0
DEC									
17...	49	22	1.1	5.7	170	250	46	.3	.1
JAN									
28...	65	17	1.1	6.5	310	360	60	.5	18
MAR									
23...	8.0	6	.3	7.5	110	52	9.2	.2	11
APR									
29...	25	11	.5	6.3	210	230	23	.3	6.6
MAY									
14...	31	14	.7	6.0	230	200	27	.3	6.0
JUN									
15...	25	11	.5	5.3	243	190	19	.4	12
JUL									
16...	14	11	.4	6.0	157	100	13	.2	16
AUG									
12...	23	12	.5	6.3	209	190	21	.3	9.2
SEP									
09...	27	14	.6	5.1	187	190	27	.3	1.8

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
OCT								
27...	523	.71	27.5	<.09	.130	.030	<.010	--
NOV								
16...	600	.82	26.2	<.09	.090	.010	<.020	--
DEC								
17...	574	.78	32.2	.03	.090	.010	<.020	--
JAN								
28...	935	1.3	16.4	1.4	.120	.080	.110	.34
MAR								
23...	210	.28	258	.98	.400	.350	.160	.49
APR								
29...	562	.76	308	<.10	.130	.030	.010	.03
MAY								
14...	546	.74	206	<.10	.180	.040	.020	.06
JUN								
15...	539	.73	291	.15	.180	.120	.080	.25
JUL								
16...	330	.44	1200	.66	.460	.090	.080	.25
AUG								
12...	495	.67	114	<.10	.230	.060	<.010	--
SEP								
09...	480	.65	87.7	.19	.440	.120	.060	.18

< Less than.

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	900	590	---	---		---	470	910	890	890	780	730
2	900	320	---	---		---	490	900	---	900	780	---
3	900	890	---	---		---	---	900	---	880	780	710
4	---	310	---	---		---	---	910	920	880	360	710
5	930	910	---	---		---	440	900	920	880	520	710
6	930	340	---	---		---	---	920	---	840	760	740
7	920	---	---	---		---	---	920	940	820	780	740
8	980	950	920	1280		---	---	900	950	810	790	750
9	950	950	920	---		---	650	860	960	690	800	750
10	950	---	---	---		---	670	850	970	710	800	760
11	---	870	---	---		---	---	870	980	---	810	750
12	---	960	---	1450		---	700	860	940	550	810	---
13	760	970	---	---		---	750	870	920	570	810	770
14	830	580	---	---		---	---	890	900	600	830	780
15	890	---	---	---		---	660	880	880	350	820	780
16	880	350	---	---		---	720	880	920	510	830	790
17	---	340	---	---		---	760	860	940	240	820	730
18	---	---	---	---		---	---	820	930	330	810	780
19	830	---	---	---		---	780	890	930	470	790	770
20	860	---	---	---		---	800	930	---	520	780	780
21	840	---	---	---		---	810	950	900	580	780	800
22	840	---	1010	---		---	810	---	900	640	790	810
23	860	---	1030	---		380	820	970	900	630	790	800
24	860	700	---	---		410	840	990	900	580	780	790
25	870	860	1080	---		---	850	---	900	610	810	790
26	860	780	---	---		---	870	990	920	670	800	820
27	860	830	---	---		450	890	920	920	700	810	820
28	860	---	1250	---		490	900	950	920	720	820	830
29	---	---	1160	---		510	---	1010	920	760	810	850
30	870	---	---	---		540	900	---	910	770	820	860
31	870	---	---	---		530	---	940	---	760	800	---
MEAN	878	689	1050	1370		473	742	909	922	662	776	775

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	9.0	---	---		---	6.0	18.0	19.0	25.0	26.0	23.0
2	14.0	12.0	---	---		---	12.0	22.0	---	22.0	28.0	---
3	12.0	10.0	---	---		---	---	17.0	---	24.0	28.0	24.0
4	---	14.0	---	---		---	---	22.0	23.0	25.0	25.0	25.0
5	12.0	8.0	---	---		---	7.0	16.0	19.0	26.0	25.0	24.0
6	12.0	11.0	---	---		---	---	18.0	---	25.0	27.0	21.0
7	11.0	---	---	---		---	5.0	17.0	22.0	26.0	27.0	20.0
8	12.0	6.0	2.0	.0		---	---	19.0	19.0	24.0	25.0	19.0
9	11.0	5.0	1.0	---		---	8.0	19.0	19.0	24.0	23.0	19.0
10	11.0	---	---	---		---	6.0	18.0	22.0	25.0	20.0	25.0
11	---	8.0	---	---		---	---	18.0	19.0	---	22.0	23.0
12	---	8.0	---	.0		---	8.0	17.0	24.0	28.0	19.0	---
13	15.0	9.0	---	---		---	15.0	15.0	25.0	25.0	20.0	19.0
14	12.0	10.0	---	---		---	---	17.0	21.0	24.0	24.0	16.0
15	17.0	---	---	---		---	14.0	17.0	20.0	21.0	22.0	15.0
16	12.0	8.0	---	---		---	14.0	20.0	20.0	24.0	27.0	14.0
17	---	7.0	---	---		---	14.0	20.0	22.0	24.0	28.0	27.0
18	---	---	---	---		---	---	21.0	20.0	24.0	25.0	18.0
19	12.0	---	---	---		---	13.0	19.0	20.0	28.0	27.0	18.0
20	10.0	---	---	---		---	10.0	20.0	---	26.0	28.0	14.0
21	9.0	---	---	---		---	10.0	17.0	21.0	27.0	28.0	17.0
22	6.0	---	.0	---		---	12.0	---	24.0	29.0	26.0	14.0
23	5.0	---	.0	---		2.0	15.0	20.0	21.0	27.0	26.0	14.0
24	5.0	3.0	---	---		2.0	17.0	17.0	24.0	26.0	22.0	14.0
25	6.0	4.0	.0	---		3.0	16.0	---	26.0	29.0	25.0	13.0
26	8.0	3.0	---	---		3.0	16.0	17.0	22.0	26.0	21.0	14.0
27	7.0	2.0	---	---		4.0	17.0	18.0	28.0	26.0	24.0	18.0
28	7.0	---	.0	---		4.0	15.0	20.0	25.0	25.0	19.0	20.0
29	---	---	.0	---		5.0	---	24.0	23.0	26.0	21.0	20.0
30	14.0	---	---	---		5.0	18.0	---	---	24.0	20.0	17.0
31	12.0	---	---	---		6.0	---	17.0	---	24.0	21.0	---
MEAN	10.5	7.5	.5	.0		4.0	12.0	18.5	22.0	25.5	24.0	19.0

06481500 SKUNK CREEK AT SIOUX FALLS, SD

LOCATION.--Lat 43°32'01", long 96°47'26", in NW¼SW¼ sec.24, T.101 N., R.50 W., Minnehaha County, Hydrologic Unit 10170203, on right bank 5 ft (2 m) downstream from bridge on Marion Road, 1.3 mi (2.1 km) upstream from mouth, 1.8 mi (2.9 km) downstream from small right-bank tributary, and 4.0 mi (6.4 km) southwest of Sioux Falls.

DRAINAGE AREA.--570 mi² (1,480 km²), approximately.

PERIOD OF RECORD.--May 1948 to September 1971 (published as "near Sioux Falls"). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,405.10 ft (428.274 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 24, 1949, nonrecording gage, and Oct. 24, 1949, to Apr. 28, 1972, water-stage recorder, both at site 1.9 mi (3.1 km) upstream at datum 10.19 ft (3.106 m) higher.

REMARKS.--Records good except those for winter period and those for period of no gage-height record, Nov. 15 to Dec. 17, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--34 years, 44.3 ft³/s (1.255 m³/s), 32,100 acre-ft/yr (39.6 hm³/yr); median of yearly mean discharges, 25 ft³/s (0.71 m³/s), 18,100 acre-ft/yr (22 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft³/s (833 m³/s) June 17, 1957, gage height, 17.78 ft (5.419 m), site and datum then in use, from rating curve extended above 8,100 ft³/s (229 m³/s) on basis of slope-area measurement of peak flow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 22	--	1400	39.6	ice jam		Sept. 1	1300	*2250	63.7	*9.58	2.920
July 14	1415	1100	31.2	6.99	2.131	Sept. 10	0300	689	19.5	5.70	1.737

No flow Oct. 1-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.74	1.6	.68	.24	183	28	11	126	5.1	9.0	1550
2	.00	.78	1.7	.65	.23	100	27	11	90	4.3	8.0	926
3	.00	.78	1.8	.62	.23	67	23	11	62	4.5	7.3	393
4	.00	.82	1.8	.60	.23	75	22	12	48	4.0	6.2	230
5	.00	.82	1.8	.57	.23	118	22	13	36	11	21	156
6	.00	.86	1.8	.56	.23	84	22	12	33	13	106	100
7	.00	.90	1.8	.55	.23	51	24	11	28	12	86	75
8	.00	.90	1.8	.53	.23	37	22	12	23	9.7	65	60
9	.00	.82	1.8	.51	.23	31	26	13	19	6.3	56	100
10	.00	.78	1.7	.49	.23	31	26	12	16	4.8	47	467
11	.00	.66	1.7	.47	.23	36	29	12	14	4.3	37	140
12	.00	.86	1.7	.45	.23	41	32	14	14	3.4	29	100
13	.00	.90	1.6	.44	.23	43	31	16	13	2.3	24	75
14	.00	.95	1.6	.42	.30	49	28	22	14	443	21	59
15	.00	1.0	1.5	.40	.45	51	29	25	13	184	19	53
16	.00	1.1	1.5	.39	1.2	49	28	29	12	188	17	47
17	.27	1.2	1.4	.37	3.0	42	25	32	10	164	14	43
18	2.1	1.3	1.3	.36	5.0	38	24	33	9.0	96	13	39
19	1.8	1.4	1.2	.35	9.0	98	22	29	8.7	60	12	35
20	1.5	1.3	1.2	.34	13	187	20	26	7.6	43	12	32
21	1.3	1.2	1.1	.33	60	99	19	22	7.6	38	11	30
22	1.0	1.2	1.1	.32	1200	92	19	19	7.2	37	9.0	27
23	.95	1.3	1.0	.30	830	75	19	17	6.7	34	8.4	25
24	.95	1.3	.97	.29	396	64	18	16	5.6	30	11	23
25	.86	1.4	.92	.29	210	56	17	17	4.7	27	9.8	21
26	.78	1.5	.88	.28	169	44	16	43	4.6	24	9.8	21
27	.82	1.5	.84	.27	98	34	14	150	4.6	20	9.0	20
28	.78	1.5	.80	.26	148	30	13	160	4.5	17	8.7	19
29	.82	1.5	.76	.25	---	28	13	104	4.4	15	9.0	19
30	.78	1.5	.73	.25	---	30	12	86	5.1	13	8.4	19
31	.82	---	.71	.24	---	29	---	120	---	11	48	---
TOTAL	15.53	32.77	42.11	12.83	3145.95	1992	670	1110	651.3	1528.7	751.6	4904
MEAN	.50	1.09	1.36	.41	112	64.3	22.3	35.8	21.7	49.3	24.2	163
MAX	2.1	1.5	1.8	.68	1200	187	32	160	126	443	106	1550
MIN	.00	.66	.71	.24	.23	28	12	11	4.4	2.3	6.2	19
AC-FT	31	65	84	25	6240	3950	1330	2200	1290	3030	1490	9730

CAL YR 1981 TOTAL 510.04 MEAN 1.40 MAX 18 MIN .00 AC-FT 1010
WTR YR 1982 TOTAL 14856.79 MEAN 40.7 MAX 1550 MIN .00 AC-FT 29470

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD

LOCATION.--Lat 43°34'01", long 96°42'39", in SW¼NW¼ sec.10, T.101 N., R.49 W., Minnehaha County, Hydrologic Unit 10170203, on right bank 20 ft (6 m) downstream from bridge on North Cliff Avenue and 4.1 mi (6.6 km) upstream from Slip Up Creek.

DRAINAGE AREA.--5,770 mi² (14,940 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1962 to September 1971 (gage heights and discharge measurements only in files of Corps of Engineers). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,294.18 ft (394.466 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Dec. 15, 1971, nonrecording gage 20 ft (6 m) upstream at same datum.

REMARKS.--Records good. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--11 years, 275 ft³/s (7.788 m³/s), 199,200 acre-ft/yr (246 hm³/yr); median of yearly mean discharges, 230 ft³/s (6.51 m³/s), 167,000 acre-ft/yr (210 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,020 ft³/s (170 m³/s) Mar. 24, 1978, gage height, 17.54 ft (5.346 m); maximum gage height, 17.62 ft (5.371 m) Mar. 22, 1978; minimum daily discharge, 0.81 ft³/s (0.023 m³/s) Feb. 13, 1982.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 10, 1969, reached a stage of 27.45 ft (8.367 m), discharge, 40,700 ft³/s (1,150 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 23	--	1420	40.2	ice jam		Aug. 4	1915	2160	61.2	10.78	3.286
July 5	2300	1210	34.3	8.50	2.591	Sept. 1	2200	2680	75.9	12.01	3.661
July 18	0930	*2860	81.0	*12.34	3.761	Sept. 10	0430	1670	47.3	9.69	2.954

Minimum daily discharge, 0.81 ft³/s (0.023 m³/s) Feb. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	32	39	19	3.4	659	664	224	330	84	284	1630
2	20	37	39	17	3.4	708	686	210	300	79	237	1930
3	21	37	66	15	2.9	760	696	198	291	76	217	806
4	21	39	63	13	2.9	679	717	189	285	82	1040	430
5	21	38	54	12	2.9	585	720	187	257	203	1020	312
6	21	35	53	9.0	2.9	524	662	177	257	419	450	243
7	22	34	51	7.6	2.1	420	545	169	234	172	356	197
8	24	33	50	5.8	1.6	358	484	166	216	164	262	173
9	28	32	48	5.2	1.5	317	486	204	204	214	206	302
10	30	30	41	5.4	1.4	271	471	167	194	208	194	1180
11	32	25	50	5.0	1.3	256	425	156	189	193	173	426
12	34	27	54	4.3	1.2	266	421	180	192	178	162	299
13	35	35	52	3.6	.81	430	465	162	200	166	152	229
14	35	39	42	2.0	1.2	543	563	209	229	366	143	203
15	35	35	46	1.4	2.4	666	557	203	217	665	134	186
16	35	37	41	1.8	2.9	735	563	206	192	775	129	175
17	37	33	39	2.4	4.6	707	523	211	176	2200	116	173
18	36	43	41	4.5	14	639	490	228	165	2610	102	168
19	36	51	43	5.9	24	682	487	236	164	1390	97	162
20	37	36	40	5.5	60	778	454	227	157	960	93	155
21	38	40	40	5.0	100	710	415	216	147	870	88	148
22	38	45	40	4.3	210	602	400	205	138	671	82	143
23	34	64	41	3.8	1280	584	371	191	127	682	84	138
24	32	54	46	3.6	950	565	351	186	118	644	112	127
25	32	55	38	3.6	623	620	340	199	111	592	81	118
26	32	52	39	4.0	649	645	313	318	106	531	76	118
27	31	56	39	4.7	557	581	289	352	102	473	76	116
28	33	53	29	6.6	564	523	268	329	96	413	72	112
29	35	54	22	5.4	---	514	249	280	89	373	88	112
30	37	57	22	4.2	---	501	236	379	88	328	84	109
31	33	---	21	3.5	---	608	---	362	---	299	336	---
TOTAL	956	1238	1329	194.1	5070.91	17436	14311	6926	5571	17080	6746	10620
MEAN	30.8	41.3	42.9	6.26	181	562	477	223	186	551	218	354
MAX	38	64	66	19	1280	778	720	379	330	2610	1040	1930
MIN	20	25	21	1.4	.81	256	236	156	88	76	72	109
AC-FT	1900	2460	2640	385	10060	34580	28390	13740	11050	33880	13380	21060

CAL YR 1981 TOTAL 17599.00 MEAN 48.2 MAX 448 MIN 16 AC-FT 34910
WTR YR 1982 TOTAL 87478.01 MEAN 240 MAX 2610 MIN .81 AC-FT 173500

06482610 SPLIT ROCK CREEK AT CORSON, SD

LOCATION.--Lat 43°36'59", long 96°33'54", in NE¼NW¼ sec.26, T.102 N., R.48 W., Minnehaha County, Hydrologic Unit 10170203, on left bank 6 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) east of Corson and 3.4 mi (5.5 km) upstream from mouth.

DRAINAGE AREA.--475 mi^2 (1,230 km^2), approximately.

PERIOD OF RECORD.--October 1965 to current year. February 1951 to September 1965 (gage heights and discharge measurements only in files of Corps of Engineers).

GAGE.--Water-stage recorder. Datum of gage is 1,304.22 ft (397.526 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Aug. 15, 1964, nonrecording gage at datum 0.15 ft (0.046 m) higher and Aug. 15, 1964, to Sept. 3, 1970, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--17 years, 64.7 ft^3/s (1.832 m^3/s), 46,880 acre-ft/yr (57.8 hm^3/yr); median of yearly mean discharges, 52 ft^3/s (1.47 m^3/s), 37,700 acre-ft/yr (46 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft^3/s (504 m^3/s) Apr. 8, 1969, gage height, 15.00 ft (4.572 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1951, 15.41 ft (4.697 m) June 17, 1957, discharge, 19,300 ft^3/s (547 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s (14.2 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 22	--	1700	48.1	ice jam	
Mar. 2	--	680	19.3	ice jam	
Mar. 14	0800	730	20.7	4.94	1.506
Mar. 20	0500	666	18.9	4.78	1.457
Mar. 24	2330	558	15.8	4.51	1.375
Aug. 4	1145	*3090	87.5	*9.33	2.844
Sept. 10	1300	955	27.0	6.19	1.887

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	9.8	18	8.5	.00	550	135	43	200	8.4	28	255
2	4.3	10	14	8.0	.00	630	133	39	142	8.5	25	70
3	4.7	10	7.8	7.5	.00	340	146	37	117	8.4	22	45
4	5.1	9.8	8.1	7.0	.00	320	96	36	112	8.0	1100	38
5	6.0	9.7	9.6	6.5	.00	320	98	35	94	5.2	458	34
6	6.9	8.6	10	5.0	.00	400	89	36	113	88	180	40
7	7.4	8.6	9.3	4.0	.00	360	103	34	143	70	103	44
8	6.3	8.2	9.3	2.0	.00	350	90	34	87	55	69	34
9	6.1	8.2	9.8	1.0	.00	340	78	40	64	40	49	34
10	6.0	6.9	10	.60	.00	272	76	81	55	30	38	458
11	6.0	6.8	10	.20	.00	270	75	79	48	27	31	215
12	6.7	7.3	10	.10	.00	398	79	66	42	24	27	97
13	9.8	7.8	11	.05	.00	503	74	64	37	28	26	80
14	16	8.4	11	.00	.00	618	93	70	41	114	24	81
15	18	8.6	11	.00	.50	602	107	83	49	205	23	60
16	19	8.1	11	.00	2.0	449	117	101	53	220	24	53
17	16	7.3	11	.00	5.0	325	117	85	43	126	22	52
18	15	7.3	10	.00	12	238	119	100	43	103	20	46
19	12	11	10	.00	30	269	141	115	48	110	19	40
20	12	11	10	.00	110	532	147	99	51	107	19	36
21	12	8.5	9.5	.00	320	308	121	87	44	161	18	34
22	10	7.9	9.5	.00	900	268	99	81	38	119	18	30
23	10	9.3	9.5	.00	750	262	87	69	35	100	16	28
24	11	11	9.0	.00	600	371	79	61	30	76	18	25
25	12	11	9.0	.00	370	376	72	57	28	65	19	25
26	11	12	9.0	.00	270	271	63	69	27	56	18	24
27	11	16	9.0	.00	240	220	57	89	25	48	19	22
28	11	10	9.0	.00	220	214	53	90	22	43	16	21
29	11	9.5	9.0	.00	---	176	48	79	20	39	19	20
30	11	11	9.0	.00	---	153	46	69	16	34	23	20
31	10	---	8.5	.00	---	147	---	247	---	30	76	---
TOTAL	307.9	279.6	310.9	50.45	3829.50	10851	2843	2295	1867	2156.5	2567	2061
MEAN	9.93	9.32	10.0	1.63	137	350	94.8	74.0	62.2	69.6	82.8	68.7
MAX	19	16	18	8.5	900	630	147	247	200	220	1100	458
MIN	4.3	6.8	7.8	.00	.00	147	46	34	16	5.2	16	20
AC-FT	611	555	617	100	7600	21520	5640	4550	3700	4280	5090	4090

CAL YR 1981 TOTAL 4419.70 MEAN 12.1 MAX 386 MIN 1.9 AC-FT 8770
WTR YR 1982 TOTAL 29418.85 MEAN 80.6 MAX 1100 MIN .00 AC-FT 58350

06485500 BIG SIOUX RIVER AT AKRON, IA

LOCATION.--Lat 42°49'42", long 96°33'45", in NW¼SW¼ sec.31, T.93 N., R.48 W., Plymouth County, Hydrologic Unit 10170203, on left bank at west edge of Akron, 0.6 mi (1.0 km) downstream from bridge on State Highway 48, and 2.3 mi (3.7 km) upstream from Union Creek.

DRAINAGE AREA.--9,030 mi² (23,390 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 1309: 1929(M), 1931-33(M), 1936(M), 1938(M), 1940(M). WSP 1389: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,118.90 ft (341.041 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 3, 1934, nonrecording gage at bridge 300 ft (91 m) upstream at same datum.

REMARKS.--Records good except those for the winter months, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--54 years, 847 ft³/s (23.99 m³/s), 613,700 acre-ft/yr (757 hm³/yr); median of yearly mean discharges, 730 ft³/s (20.7 m³/s), 529,000 acre-ft/yr (650 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,800 ft³/s (2,290 m³/s) Apr. 9, 1969, gage height, 22.99 ft (7.007 m); minimum daily, 4.0 ft³/s (0.11 m³/s) Jan. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,500 ft³/s (184 m³/s) at 2230 hours, Feb. 25, gage height, 16.45 ft (5.014 m), backwater from ice, no other peak above base of 3,500 ft³/s (99.1 m³/s); minimum daily discharge, 26 ft³/s (0.74 m³/s) Feb. 12-15.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 13 to Apr. 11, May 10-16,
June 15-28, July 12-27, Sept. 13-25)

2.4	86	6.0	1,140
3.0	191	8.0	2,040
4.5	615	11.0	3,610

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	172	180	78	36	2700	1370	820	2480	482	671	819
2	96	172	170	74	35	2400	1410	784	2670	455	608	1310
3	96	168	158	70	33	2400	1530	748	2550	443	566	1810
4	101	164	181	66	32	2250	1480	716	2160	413	521	2090
5	105	160	204	63	31	2170	1480	698	1780	401	481	1470
6	105	155	188	62	31	1840	1500	681	1580	443	1060	1040
7	104	153	196	60	30	1720	1460	663	1440	1580	1840	878
8	104	154	225	58	29	1600	1410	647	1350	1720	1110	769
9	109	145	205	56	28	1500	1360	622	1320	1610	837	680
10	116	143	190	55	28	1400	1240	618	1270	1250	688	629
11	112	144	180	54	27	1300	1200	629	1290	1140	573	857
12	110	141	180	51	26	1200	1190	646	1090	990	508	1930
13	110	137	190	50	26	1140	1180	668	990	920	463	2030
14	113	137	210	49	26	1140	1180	697	926	860	427	1620
15	116	135	185	48	26	1600	1270	726	930	839	395	1330
16	123	131	175	48	28	2180	1410	809	954	781	371	1210
17	174	130	160	49	32	2330	1450	1000	990	1000	344	1080
18	203	135	150	48	45	2290	1440	1220	1010	1200	318	968
19	204	142	145	46	70	2090	1460	1320	964	1780	303	906
20	206	133	138	45	180	1970	1450	1290	897	2240	286	841
21	202	125	134	38	400	2460	1380	1250	827	1970	260	776
22	201	101	132	36	1000	3310	1320	1160	770	1580	249	714
23	192	139	130	36	3000	2670	1230	1070	717	1480	237	665
24	188	171	127	36	5200	2170	1150	1010	667	1270	261	618
25	194	176	120	38	5600	2090	1100	971	626	1190	284	575
26	185	176	110	39	6000	2100	1050	972	610	1130	317	532
27	180	178	103	39	5000	2020	998	1020	566	1040	313	493
28	178	177	96	38	3200	1820	951	1510	527	951	261	464
29	176	169	92	38	---	1630	899	1880	515	882	243	483
30	176	183	86	38	---	1510	860	1850	503	805	294	466
31	176	---	82	37	---	1430	---	2080	---	736	717	---
TOTAL	4555	4546	4822	1543	30399	60[illegible]	38008	30775	34969	33581	15806	30053
MEAN	147	152	156	49.8	1086	1949	1280	993	1166	1083	510	1002
MAX	206	183	225	78	6000	3310	1530	2080	2670	2240	1840	2090
MIN	96	101	82	36	26	1140	860	618	503	401	237	464
AC-FT	9030	9020	9560	3060	60300	119900	76180	61040	69360	66610	31350	59610

CAL YR 1981 TOTAL 85601 MEAN 235 MAX 2910 MIN 78 AC-FT 169800
WTR YR 1982 TOTAL 289887 MEAN 794 MAX 6000 MIN 26 AC-FT 575000

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1981.
WATER TEMPERATURES: October 1974 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,310 micromhos Jan. 20, 1977; minimum daily, 260 micromhos Mar. 20, 23, 1978.
WATER TEMPERATURES: Maximum daily, 31.0°C Feb. 19, 1975, July 23, 1976, July 11, 1981; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
NOV 17...	1200	130	1120	8.6	7.5	4.0	14.4	K8	K80	424	194
JAN 20...	1230	45	1560	7.8	.5	3.0	--	180	310	572	212
MAR 04...	1430	2250	360	7.6	2.0	--	12.1	120	3500	--	--
MAY 13...	1230	675	800	8.7	19.0	28	--	--	--	335	165
JUL 15...	1100	842	520	8.4	26.5	140	6.4	5000	3600	381	151
AUG 19...	1100	306	730	8.6	24.5	41	6.6	230	360	297	132

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
NOV 17...	99	43	67	25	1.5	6.5	230	230	88	.4	2.1
JAN 20...	150	48	100	27	1.9	8.4	270	360	150	.5	21
MAR 04...	--	--	--	--	--	--	--	--	--	--	--
MAY 13...	68	40	39	20	1.0	5.8	200	170	45	.3	.7
JUL 15...	93	36	26	13	.6	6.0	160	230	34	.4	14
AUG 19...	61	35	40	22	1.0	7.3	160	165	50	.3	3.1

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)
NOV 17...	723	674	.98	254	1.9	.200	.26	1.30	.550	.670	2.1
JAN 20...	997	965	1.4	121	2.8	2.90	3.7	4.90	1.40	1.50	4.6
MAR 04...	--	--	--	--	2.5	1.20	1.5	3.30	.490	.550	1.7
MAY 13...	512	501	.70	933	<.10	.500	.64	2.50	<.010	.380	1.2
JUL 15...	523	508	.71	1190	3.7	.130	.17	3.10	.300	.680	2.1
AUG 19...	524	456	.71	433	<.10	.170	.22	3.30	.050	.260	.80

< Less than.
K Non-ideal colony count.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
NOV 17...	1200	5	1	4	<1	<1	<10	--	<10	4	<3
JAN 20...	1230	3	0	4	<1	<1	10	--	<10	1	<3
JUL 15...	1100	7	1	6	<1	<1	20	--	<10	6	<1
AUG 19...	1100	6	2	4	<1	<1	<10	--	<10	<1	<1

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)
NOV 17...	6	3	3	400	14	4	3	1	130	80
JAN 20...	5	3	2	510	24	<1	--	1	920	30
JUL 15...	23	16	7	13000	9	6	3	5	1000	990
AUG 19...	14	11	3	4000	<3	4	--	<1	630	630

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
NOV 17...	52	.1	--	<.1	2	0	2	20	10	7
JAN 20...	890	.1	--	<.1	3	1	2	20	0	33
JUL 15...	6	.4	.3	.1	2	0	3	70	50	19
AUG 19...	3	.2	--	<.1	2	1	1	30	20	10

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)
NOV 17...	1200	--	.0	--	.0	--	.0	--	.1	--	.0	--

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)
NOV 17...	--	.1	--	.0	--	--	.0	--	.0	--	.0	--

< Less than.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
NOV 17...	--	.0	--	--	--	--	.0	--	--	--	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 17...	1200	130	59	21	93	--	--	--	--
JAN 20...	1230	45	120	15	98	--	--	--	--
MAR 04...	1430	2250	--	--	--	--	--	--	--
MAY 13...	1230	675	220	401	85	--	--	--	--
JUL 15...	1100	842	737	1680	--	69	70	80	100
AUG 19...	1100	306	222	183	98	--	--	--	--

06486000 MISSOURI RIVER AT SIOUX CITY, IA

LOCATION.--Lat 42°29'09", long 96°24'49", in NW¼SE¼ sec.16, T.29 N., R.9 E., sixth principal meridian, Dakota County, Nebraska, Hydrologic Unit 10230001, on right bank on upstream side of bridge on U.S. Highway 20 and 77 at South Sioux City, Nebraska, 1.9 mi (3.1 km) downstream from Big Sioux River, and at mile 732.3 (1,178.3 km). Prior to Jan. 31, 1981, at site 227 ft (69 m) downstream.

DRAINAGE AREA.--314,600 mi^2 (814,800 km^2), approximately.

PERIOD OF RECORD.--October 1897 to current year in reports of Geological Survey. Prior to October 1928 and October 1931 to September 1938, monthly discharges only, published in WSP 1310. January 1879 to December 1890 (monthly discharges only) in House Document 238, 73rd Congress, 2d session, Missouri River. Gage-height records collected in this vicinity September 1878 to December 1899 are contained in reports of Missouri River Commission and since July 1889 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 716: 1929-30. WSP 876: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.98 ft (322.168 m) NGVD. Sept. 2, 1878, to Dec. 31, 1905, nonrecording gages at various locations within 1.7 mi (2.7 km) of present site and at various datums. Jan. 1, 1906, to Feb. 14, 1935, nonrecording gage, and Feb. 15, 1935, to Sept. 30, 1969, water-stage recorder at site 227 ft (69 m) downstream at datum 19.98 ft (6.090 m) higher, and Oct. 1, 1969, to Sept. 30, 1970, at datum 20.00 ft (6.096 m) higher. Oct. 1, 1970, to Jan. 30, 1981, water-stage recorder at site 227 ft (69 m) downstream at present datum.

REMARKS.--Records good. Flow regulated by upstream main-stem reservoirs. National Weather Service gage-height telemeter at station. Corps of Engineers rain-gage and gage-height satellite telemeter at station. Water-quality records published in WRD IA-82-1.

AVERAGE DISCHARGE.--85 years, 31,960 ft^3/s (905 m^3/s), 23,160,000 acre-ft/yr (28,600 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 441,000 ft^3/s (12,500 m^3/s) Apr. 14, 1952, gage height, 24.28 ft (7.401 m), datum then in use; minimum, 2,500 ft^3/s (70.8 m^3/s) Dec. 29, 1941; minimum gage height, 9.00 ft (2.743 m) Jan. 8, 1980, based on gage readings at site 14 mi (22.5 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35,700 ft^3/s (1,010 m^3/s) Oct. 14, maximum gage height, 19.81 ft (6.038 m) July 6; minimum daily discharge, 10,000 ft^3/s (283 m^3/s) Jan. 10; minimum gage height, 11.51 ft (3.508 m) Jan. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34400	35000	16900	14400	15200	17000	29900	30500	28400	31800	33000	33300
2	35300	35000	16300	14400	15000	17000	31100	30000	28700	31500	32600	32600
3	34900	34600	16400	14000	14800	17000	31900	30500	30000	31200	32500	33100
4	34600	34000	16000	13500	14800	15600	30200	31000	29300	30900	32700	33300
5	34000	33600	15500	14000	15000	14800	30300	31500	30200	31300	32700	33500
6	33700	31600	15700	14500	15200	13900	30800	32500	30800	31300	32800	33000
7	33600	29000	15800	15000	16000	13400	31400	32000	30800	31700	32400	32700
8	33500	26500	15800	15000	17000	12500	31800	31500	30400	33300	32100	33000
9	33700	23800	15800	14500	16800	12900	31600	30500	30400	33300	31200	32900
10	33800	21000	15700	10000	16500	12900	31400	31000	30100	33400	31200	32900
11	33700	18900	15700	10500	16300	15100	31300	32100	29900	33600	31400	32600
12	34200	18400	15700	13000	16300	14000	31700	32500	29100	32400	31100	32700
13	34800	18400	15800	14000	16500	15400	32200	32500	27100	31600	30500	33400
14	35200	18100	15900	14500	16700	15100	32500	31800	27000	31800	30600	33100
15	35000	17700	15500	15000	16700	15500	33000	31300	27600	32100	30800	32200
16	34500	17300	15500	14000	16700	16500	33100	31400	27700	32000	30900	32000
17	35000	16900	14500	13000	16700	18600	32600	31600	27000	31900	31100	32000
18	34900	16800	14000	12000	16700	20800	31900	31600	27600	31800	31300	31700
19	34200	16800	13500	13500	16700	24100	31900	31100	28600	31500	31500	31900
20	34100	16500	13000	15500	17500	26800	31600	32000	30200	32200	31200	31900
21	34200	16300	15500	16000	18500	27700	31300	32700	30500	33100	31300	32000
22	33900	16300	17000	15500	20000	28300	31400	31300	30500	33300	31500	32900
23	33600	16400	16500	14000	23000	29600	31400	27600	30700	33400	32100	33400
24	33600	16300	16000	13000	21500	29100	31200	29600	31600	32800	32500	33600
25	33500	16300	15500	14500	17500	29100	30900	31000	32100	32300	32500	33500
26	33300	16400	15500	16000	17000	29000	30500	32400	31600	32100	32100	33600
27	33500	16200	15500	16500	17000	29000	29900	32300	31300	32200	32300	33100
28	33900	16100	15500	16200	17000	29200	30600	31100	31100	32500	32500	33500
29	34400	16100	15500	16000	---	28900	31600	29800	30900	33300	32800	33900
30	34900	16400	15500	15800	---	29100	32100	30400	31600	33600	32900	34100
31	35200	---	15200	15500	---	30200	---	30500	---	33400	33000	---
TOTAL	1061100	642700	482200	443300	474600	648100	943100	967600	892800	1002600	989100	987400
MEAN	34230	21420	15550	14300	16950	20910	31440	31210	29760	32340	31910	32910
MAX	35300	35000	17000	16500	23000	30200	33100	32700	32100	33600	33000	34100
MIN	33300	16100	13000	10000	14800	12500	29900	27600	27000	30900	30500	31700
AC-FT	2105000	1275000	956400	879300	941400	1286000	1871000	1919000	1771000	1989000	1962000	1959000

CAL YR 1981 TOTAL 9768200 MEAN 26760 MAX 37000 MIN 11000 AC-FT 19380000
WTR YR 1982 TOTAL 9534600 MEAN 26120 MAX 35300 MIN 10000 AC-FT 18910000

MISCELLANEOUS RAINFALL DATA

441037103292701 OX BOW RANCH NEAR NEMO, SD

RAINFALL, ACCUMULATED (INCHES), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							.00	.00	.24	.38	.06	.00
2							.00	.00	.20	.00	.00	.00
3							.00	.00	.16	.00	.00	.00
4							.00	.42	.00	.00	.40	.00
5							.00	.00	.00	.24	.00	.25
6							.00	.00	.02	.00	.16	.00
7							.00	.00	.05	.00	.00	.07
8							.00	---	.02	.26	.18	.00
9							.00	.00	.00	.10	.74	.00
10							.00	.50	.24	.00	.00	.13
11							.00	.00	.00	.35	.00	.07
12							.10	.00	.00	.00	.00	.06
13							.00	1.10	.40	.00	.00	.04
14							.00	1.00	.00	.00	.00	1.24
15							.00	.68	.50	.06	.00	.00
16							.03	.26	.20	.00	.28	.00
17							.00	.50	.20	.00	.04	.00
18							.00	.00	.00	.00	.08	.00
19							.02	1.10	.00	.00	.50	.00
20							.08	.46	.00	.00	.00	.00
21							.00	.00	.00	.00	.00	.00
22							.00	.00	.00	.18	.00	.00
23							.00	.68	.00	.73	.00	.00
24							.00	.00	.00	.10	.00	.00
25							.06	---	.00	.70	.00	.00
26							.02	---	.00	.00	.00	.14
27							.00	---	.00	.00	.00	.90
28							.00	---	.00	.50	.30	.16
29							.08	---	.00	.00	.00	.30
30							.00	---	.00	.00	.00	.30
31							---	---	---	.00	.05	---
TOTAL							0.39	6.70	2.23	3.60	2.79	3.66
MEAN							.01	.29	.07	.12	.09	.12
MAX							.10	1.10	.50	.73	.74	1.24
MIN							.00	.00	.00	.00	.00	.00

WTR YR 1982 TOTAL 19.37 MEAN .11 MAX 1.24 MIN .00

The following miscellaneous discharge measurements were made on Rapid Creek and tributaries to Rapid Creek.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06413650 - LIME CREEK AT MOUTH AT RAPID CITY (LAT 44 04 27 LONG 103 15 53)					
DEC , 1981 10...	0915	1.2	4.0	.0	1060
06413800 - DEADWOOD AVE DRAIN AT MOUTH AT RAPID CITY (LAT 44 04 58 LONG 103 15 22)					
DEC , 1981 10...	1000	2.6	6.5	.0	930
06415500 - HAWTHORN DITCH AT RAPID CITY SD (LAT 44 04 30 LONG 103 11 10)					
DEC , 1981 10...	1345	.51	5.0	10.0	710
440240103193000 - RAPID CREEK (LAT 44 02 40 LONG 103 19 30)					
DEC , 1981 10...	1145	12	.5	5.0	394
440242103194500 - RAPID CREEK (LAT 44 02 42 LONG 103 19 45)					
DEC , 1981 10...	1030	13	1.0	6.0	392
440242103211300 - RAPID CREEK (LAT 44 02 42 LONG 103 21 13)					
DEC , 1981 10...	1000	16	1.0	14.0	420
440246103185300 - RAPID CREEK (LAT 44 02 46 LONG 103 18 53)					
DEC , 1981 10...	1145	11	2.5	9.0	400
440252103202900 - RAPID CREEK (LAT 44 02 52 LONG 103 20 29)					
DEC , 1981 10...	1045	15	1.0	6.5	415
440255103201100 - RAPID CREEK (LAT 44 02 55 LONG 103 20 11)					
DEC , 1981 10...	0930	15	1.0	5.0	407
440321103181200 - RAPID CREEK (LAT 44 03 21 LONG 103 18 12)					
DEC , 1981 10...	1300	10	3.5	14.5	388

MISCELLANEOUS DISCHARGE MEASUREMENTS

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
440330103101600 - RAPID CREEK (LAT 44 03 30 LONG 103 10 16)					
DEC , 1981					
10...	1330	19	4.0	10.0	540
440331103175200 - RAPID CREEK (LAT 44 03 31 LONG 103 17 52)					
DEC , 1981					
10...	1245	24	12.0	14.5	390
440335103165300 - RAPID CREEK (LAT 44 03 35 LONG 103 16 53)					
DEC , 1981					
10...	1330	24	6.5	12.5	400
440417103112800 - RAPID CREEK (LAT 44 04 17 LONG 103 11 28)					
DEC , 1981					
10...	1245	21	4.5	10.0	520
440444103151800 - RAPID CREEK (LAT 44 04 44 LONG 103 15 18)					
DEC , 1981					
10...	1045	21	4.5	2.0	400
440457103125000 - RAPID CREEK (LAT 44 04 57 LONG 103 12 50)					
DEC , 1981					
10...	1145	22	4.5	5.0	520

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06356000 - SOUTH FORK GRAND R AT BUFFALO SD (LAT 45 34 34 LONG 103 32 38)					
OCT , 1981					
06...	1130	1.6	6.5	12.5	1400
DEC					
08...	1210	2.9	.0	4.0	1620
APR , 1982					
14...	1130	9.8	13.0	23.0	790
MAY					
12...	1045	5.6	9.0	9.5	1630
JUN					
23...	1305	3.8	23.0	--	1280
AUG					
03...	1540	1.9	26.0	31.0	1600
SEP					
09...	1255	1.7	22.0	33.5	1620
06356560 - SOUTH FORK GRAND R NEAR CASH SD (LAT 45 38 56 LONG 102 38 27)					
NOV , 1981					
19...	1100	4.8	--	--	--
JAN , 1982					
07...	1445	1.3	.0	--	3200
MAR					
04...	--	33	--	--	--
31...	1515	828	5.0	2.5	390
APR					
01...	1350	323	5.5	11.5	445
29...	1400	29	9.5	9.0	1900
MAY					
27...	1205	102	19.0	23.5	1110
JUN					
24...	1230	31	23.0	25.0	1600
JUL					
21...	1525	19	27.0	27.5	2440
AUG					
19...	1305	12	25.0	23.5	2100
SEP					
21...	1450	11	12.0	19.0	2710
06357500 - GRAND R AT SHADEHILL SD (LAT 45 45 25 LONG 102 11 41)					
NOV , 1981					
19...	1300	11	--	-2.0	--
JAN , 1982					
07...	1035	11	.0	--	2075
MAR					
04...	--	1.8	--	--	--
APR					
01...	0750	.72	2.5	3.5	1725
29...	1545	303	7.0	15.5	1550
MAY					
27...	1730	1310	14.5	22.5	1320
JUN					
25...	1020	398	23.5	27.5	1440
JUL					
22...	0730	44	21.0	24.0	1380
AUG					
20...	0850	118	24.5	26.0	1320
SEP					
22...	0800	86	9.5	5.0	1680

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06359500 - MOREAU R NEAR FAITH SD (LAT 45 11 52 LONG 102 09 22)					
NOV , 1981					
18...	--	1.6	--	--	--
JAN , 1982					
06...	1445	.74	.0	--	2900
MAR					
03...	0900	71	.5	-13.0	--
31...	1150	2720	4.0	7.0	385
APR					
30...	0840	57	10.0	24.0	1320
MAY					
17...	1300	5720	14.5	21.5	510
27...	0930	591	18.5	19.5	685
JUN					
25...	1220	120	21.5	25.0	1080
JUL					
21...	1305	121	26.0	31.5	1170
AUG					
20...	1030	43	25.0	26.5	1080
SEP					
21...	1240	10.0	12.0	16.5	2190
06360500 - MOREAU R NEAR WHITEHORSE SD (LAT 45 15 21 LONG 100 50 33)					
MAR , 1982					
29...	1200	1000	4.8	--	953
MAY					
25...	1315	7950	17.0	--	559
JUL					
20...	1045	38	27.3	--	2050
AUG					
19...	1010	52	27.6	--	1092
06395000 - CHEYENNE R AT EDGEMONT SD (LAT 43 18 20 LONG 103 49 14)					
OCT , 1981					
05...	1615	.72	16.5	15.5	5550
DEC					
01...	1635	11	.0	-.5	5550
FEB , 1982					
02...	1130	4.9	.0	-1.5	4550
22...	1400	227	.5	16.5	1750
MAR					
16...	1020	131	3.5	7.5	2080
APR					
14...	0945	28	12.5	19.5	4700
MAY					
04...	1525	7.5	21.0	18.5	5100
JUN					
02...	1550	85	12.0	11.0	2090
17...	1510	284	20.5	16.5	938
JUL					
07...	1300	71	25.0	30.5	2590
AUG					
03...	1710	127	28.5	35.0	1410
SEP					
02...	0810	41	16.0	14.5	2200

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

06400000 - HAT CR NEAR EDGEMONT SD (LAT 43 14 46 LONG 103 35 16)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
FEB , 1982					
22...	1610	.12	4.5	1.0	1210
MAR					
16...	1350	.01	12.0	12.5	2580
APR					
14...	1215	.01	18.5	26.0	3100
JUN					
02...	1215	9.8	13.0	10.0	2370
JUL					
07...	1635	8.0	25.0	29.0	2430
AUG					
03...	1420	.39	25.5	35.0	2430
SEP					
01...	1630	4.8	25.0	25.0	1760

06400497 - CASCADE SPRINGS NEAR HOT SPRINGS SD (LAT 43 20 20 LONG 103 33 08)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1981					
05...	1235	20	20.5	17.0	2610
DEC					
02...	1015	18	20.0	5.0	2620
FEB , 1982					
02...	1555	18	20.0	--	2650
MAR					
16...	1530	18	20.5	13.0	2600
APR					
14...	1425	19	20.5	25.5	2640
MAY					
04...	1050	21	20.5	19.0	2640
JUN					
02...	1010	20	20.0	8.5	2600
JUL					
12...	1310	22	21.0	38.0	2620
AUG					
03...	1100	25	20.5	22.0	2570
SEP					
02...	1200	20	21.0	25.0	2600

06401500 - CHEYENNE R BELOW ANGOSTURA DAM SD (LAT 43 20 42 LONG 103 26 12)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
FEB , 1982					
01...	1140	2.6	3.0	-1.0	2420
MAR					
17...	1020	2.7	7.5	9.0	2360
APR					
13...	1145	2.7	13.5	21.0	2420
MAY					
03...	1135	2.5	17.0	29.5	2400
JUN					
03...	1015	3.0	13.0	10.5	2200
JUL					
08...	1035	4.5	21.0	27.5	2000
AUG					
02...	1015	2.5	22.0	33.5	2030

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06402000 - FALL R AT HOT SPRINGS SD (LAT 43 25 50 LONG 103 28 33)					
OCT , 1981					
06...	0855	21	23.0	7.0	1300
DEC					
02...	1205	22	23.0	10.0	1310
FEB , 1982					
03...	0955	23	19.0	--	1290
MAR					
16...	1735	22	22.5	8.5	1270
APR					
13...	0845	20	24.0	12.5	1310
MAY					
04...	0840	19	24.0	14.5	1270
JUN					
01...	1815	23	24.0	14.0	1270
JUL					
08...	1810	20	27.0	27.0	1270
AUG					
02...	1735	20	27.0	27.5	1320
SEP					
02...	1430	22	28.0	25.0	1320
06402500 - BEAVER CR NEAR BUFFALO GAP SD (LAT 43 27 56 LONG 103 18 22)					
OCT , 1981					
06...	1120	1.4	10.0	19.0	2770
DEC					
02...	1440	10	4.5	7.0	2510
FEB , 1982					
03...	1240	9.8	.0	--	2540
MAR					
17...	1305	11	10.0	11.0	2420
APR					
14...	1635	8.4	17.0	23.0	2520
MAY					
05...	0845	1.0	9.0	12.0	3010
JUN					
03...	1300	14	12.0	11.0	2400
JUL					
12...	1015	10	19.0	36.0	2440
AUG					
12...	1120	7.9	21.5	27.5	2470
SEP					
02...	1715	7.8	20.0	25.5	2400
06403300 - FRENCH CREEK ABOVE FAIRBURN SD (LAT 43 43 02 LONG 103 22 03)					
MAR , 1982					
31...	1140	2.1	5.5	14.0	267
APR					
12...	1410	3.6	6.5	18.0	230
MAY					
05...	1440	3.0	12.5	14.5	257
JUN					
04...	1600	90	16.0	19.5	284
JUL					
01...	1105	42	18.5	22.0	218
AUG					
05...	1125	8.8	20.0	24.5	263
SEP					
03...	1045	5.4	16.5	31.5	274

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06404000	- BATTLE CR NEAR KEYSTONE SD (LAT 43 52 18 LONG 103 20 09)				
OCT , 1981					
07...	1155	.86	11.0	22.5	255
DEC					
03...	1645	1.1	1.0	-.5	333
FEB , 1982					
05...	1215	.62	.0	--	355
MAR					
18...	1500	3.9	1.5	.0	255
APR					
15...	1500	5.1	13.5	14.5	280
MAY					
07...	1400	2.1	13.0	20.5	280
JUN					
08...	1435	30	17.5	22.5	317
JUL					
12...	1635	7.0	23.5	31.0	192
AUG					
05...	1605	2.5	27.0	27.5	228
SEP					
03...	1605	.79	21.5	26.0	272
06404998	- GRACE COOLIDGE CR NR GAME LODGE NR CUSTER (LAT 43 45 40 LONG 103 21 49)				
OCT , 1981					
06...	1405	1.3	12.0	16.5	182
DEC					
03...	1115	1.1	.5	3.0	188
FEB , 1982					
03...	1630	.99	.0	--	214
MAR					
17...	1635	1.1	6.5	10.5	176
APR					
12...	1020	2.5	7.5	17.0	167
MAY					
05...	1140	1.0	11.5	12.5	190
JUN					
08...	1140	23	14.5	19.5	115
JUL					
01...	1415	13	19.0	27.5	113
AUG					
05...	1445	3.0	23.5	27.5	155
SEP					
03...	1340	2.0	19.0	25.5	171
06406000	- BATTLE CR AT HERMOSA SD (LAT 43 49 41 LONG 103 11 44)				
OCT , 1981					
07...	0945	2.2	10.0	16.0	760
DEC					
03...	1410	2.9	2.5	3.5	728
FEB , 1982					
05...	1510	3.0	.0	--	750
MAR					
18...	1220	3.0	6.0	4.5	715
APR					
16...	1540	2.7	10.0	6.5	706
MAY					
07...	1100	2.6	11.5	22.5	700
JUN					
03...	1640	36	11.0	14.0	403
JUL					
14...	1030	8.5	19.0	24.0	577
AUG					
04...	1430	8.8	22.0	28.0	592
SEP					
09...	1500	6.1	20.0	24.5	620

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06408500 - SPRING CR NEAR HERMOSA SD (LAT 43 56 30 LONG 103 09 33)					
JUN , 1982					
18...	1455	4.8	18.0	21.5	560
JUL					
01...	1700	10	22.0	28.0	603
26...	1335	4.6	19.0	21.0	453
AUG					
04...	1740	8.5	22.0	21.5	723
SEP					
09...	1230	1.3	21.0	25.0	922
06408700 - RHOADS FORK NEAR ROCHFORD SD (LAT 44 08 12 LONG 103 51 29)					
NOV , 1981					
10...	1220	5.1	7.0	13.0	440
DEC					
02...	1115	4.4	4.5	-1.5	448
MAR , 1982					
11...	1140	4.0	7.5	10.0	443
APR					
22...	1145	4.7	11.0	17.5	430
MAY					
18...	1255	4.6	11.5	22.5	440
JUN					
11...	1305	5.1	13.0	19.0	431
JUL					
14...	1450	4.7	14.5	27.0	435
AUG					
10...	1200	5.8	13.0	25.0	398
SEP					
08...	1505	5.8	12.5	26.5	438
06409000 - CASTLE CR ABOVE DEERFIELD RES NEAR HILL CITY SD (LAT 44 00 49 LONG 103 49 48)					
OCT , 1981					
14...	1420	8.8	7.0	8.5	345
14...	1430	8.8	7.0	--	345
NOV					
05...	1050	7.4	2.2	10.5	430
05...	1230	7.4	2.2	--	430
DEC					
01...	1320	6.8	.0	-3.5	320
01...	1330	6.8	.0	--	320
JAN , 1982					
05...	1330	7.2	.0	.0	420
FEB					
08...	1530	5.5	.0	--	450
MAR					
09...	1300	7.5	2.0	--	450
09...	1305	7.5	2.0	--	450
APR					
06...	1505	11	3.0	4.0	470
06...	1515	11	3.0	--	470
MAY					
03...	1430	13	13.0	30.0	470
JUN					
02...	1500	20	7.0	12.5	470
JUL					
06...	--	11	16.1	--	435
06...	1545	11	16.0	--	435
AUG					
11...	1430	11	19.0	26.5	439
SEP					
01...	1630	9.4	16.5	24.0	450

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06410000 - CASTLE CR BELOW DEERFIELD DAM SD (LAT 44 01 45 LONG 103 46 53)					
OCT , 1981					
14...	1250	6.2	10.0	5.5	300
DEC					
01...	1100	2.1	2.5	5.5	300
FEB , 1982					
08...	1150	2.5	2.5	--	430
MAY					
03...	1200	45	4.5	23.0	440
JUN					
02...	1115	48	7.0	10.5	420
AUG					
11...	1200	80	18.0	27.5	390
SEP					
01...	1410	76	19.0	25.0	390
06410500 - RAPID CR ABOVE PACTOLA RES NEAR SILVER CITY SD (LAT 44 05 05 LONG 103 34 48)					
OCT , 1981					
14...	1115	20	3.5	3.0	418
DEC					
02...	1415	11	.5	4.5	425
FEB , 1982					
11...	1535	8.8	425	2.0	425
MAR					
22...	1150	17	.0	8.0	382
APR					
20...	1010	54	2.0	4.5	394
MAY					
19...	1115	79	10.5	16.5	386
JUN					
24...	1000	133	11.0	20.5	319
JUL					
15...	1055	113	14.0	29.0	373
AUG					
06...	1055	107	15.5	28.0	370
SEP					
08...	1125	96	15.0	21.5	378
06411500 - RAPID CR BELOW PACTOLA DAM SD (LAT 44 04 36 LONG 103 28 54)					
OCT , 1981					
14...	1240	9.5	8.0	5.5	372
DEC					
03...	1130	11	5.5	4.5	367
FEB , 1982					
11...	1010	14	3.0	1.0	375
MAR					
22...	1445	13	4.5	5.5	380
APR					
20...	1200	13	6.5	6.5	377
MAY					
19...	1340	21	7.0	17.0	371
JUN					
24...	1220	22	7.5	24.0	372
JUL					
15...	1405	139	7.0	29.0	373
AUG					
06...	1330	104	7.5	26.0	365
SEP					
08...	0900	86	8.0	14.5	372

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

06412500 - RAPID CR ABOVE CANYON LAKE NEAR RAPID CITY SD (LAT 44 03 04 LONG 103 18 47)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1981					
01...	0855	30	8.5	8.5	337
05...	0405	3.0	--	--	--
05...	0415	--	11.0	--	--
05...	0550	3.0	--	--	--
05...	0555	3.0	11.0	--	--
05...	0735	3.0	--	--	--
26...	1050	2.2	7.0	21.0	350
DEC					
10...	0850	8.4	2.0	--	--
10...	0900	9.2	2.0	--	340
20...	1540	12	--	--	--
20...	1905	16	--	--	--
MAR , 1982					
07...	1300	E6.0	.5	--	386
07...	1530	E6.0	.5	--	382
07...	1800	E6.0	.5	--	369
07...	2115	E6.0	.5	--	369
09...	1110	E7.0	.5	--	361
09...	1435	11	1.5	--	348
09...	1740	12	1.5	--	347
09...	2050	9.2	.5	--	356
APR					
28...	0800	4.0	--	--	--
28...	0805	4.0	7.0	--	370
MAY					
10...	0525	43	--	--	--
10...	0835	48	--	--	--
10...	0840	48	--	--	--
10...	0845	48	10.5	--	354
10...	1045	48	--	--	--
10...	1050	48	--	--	--
10...	1100	48	11.5	--	352
19...	0035	16	12.0	--	354
19...	2020	13	--	--	--
19...	2245	15	--	--	--
20...	0025	16	--	--	--
20...	0615	20	--	--	--
20...	0620	20	11.5	--	351
20...	1305	23	--	--	--
20...	1310	23	11.5	--	353
JUN					
15...	0645	27	13.5	--	322
16...	0915	39	16.0	--	327
16...	1555	30	--	--	--
16...	1605	32	16.5	--	306
16...	1725	33	--	--	--
23...	0905	27	--	--	--
23...	0915	39	16.0	--	327
AUG					
30...	1055	103	13.0	28.0	402

E Estimated.

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

06414000 - RAPID CR AT RAPID CITY SD (LAT 44 05 09 LONG 103 14 31)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1981					
01...	1400	43	16.0	18.0	432
05...	0450	31	--	--	--
05...	0500	33	11.0	--	--
05...	0630	29	11.0	--	--
05...	0810	25	--	--	--
05...	0825	25	11.0	--	530
26...	1350	22	11.5	22.0	600
DEC					
10...	0935	25	--	--	--
10...	0940	25	4.5	--	528
20...	1200	26	--	--	--
20...	1210	26	5.0	--	536
20...	1400	30	--	--	--
20...	1405	32	--	--	--
20...	1410	31	5.0	--	686
20...	1705	35	--	--	--
20...	1710	35	4.5	--	650
MAR , 1982					
07...	1135	22	4.5	--	526
07...	1455	22	6.5	--	573
07...	1725	21	5.5	--	581
07...	2040	22	4.0	--	534
09...	1020	20	5.5	--	523
09...	1355	33	8.0	--	614
09...	1700	58	5.0	--	693
09...	1955	42	4.0	--	668
10...	0110	29	--	--	--
10...	0510	28	--	--	--
10...	0910	26	--	--	--
APR					
28...	0905	20	--	--	--
28...	0910	20	9.5	--	564
MAY					
10...	0620	96	--	--	--
10...	0625	98	--	--	--
10...	0720	134	--	--	--
10...	0750	148	--	--	--
10...	0800	141	--	--	--
10...	0810	143	12.0	--	390
10...	0820	148	--	--	--
10...	0850	129	--	--	--
10...	0920	111	--	--	--
10...	0955	94	--	--	--
10...	1000	89	12.5	--	441
10...	1050	79	--	--	--
10...	1150	75	--	--	--
10...	1210	70	--	--	--
10...	1215	68	14.5	--	458
13...	0910	86	10.0	--	406
19...	2200	101	--	--	--
19...	2315	89	--	--	--
20...	0105	71	--	--	--
20...	0115	70	14.0	--	580
20...	0715	91	--	--	--
20...	0720	93	12.5	--	606
20...	1415	73	--	--	--
20...	1420	71	13.0	--	742
JUN					
15...	0725	57	15.5	--	548
16...	1510	86	--	--	--
16...	1645	84	--	--	--
16...	1655	82	19.0	--	500
16...	1825	172	17.5	--	417
16...	2010	141	--	--	--
23...	1025	42	--	--	--
23...	1035	42	20.5	--	465
AUG					
30...	0905	126	16.0	28.0	440

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06418900 - RAPID CREEK BELOW SEWAGE PLANT NR RAPID CITY SD (LAT 44 01 24 LONG 103 05 43)					
NOV , 1981					
02...	1155	28	12.0	18.5	1090
DEC					
04...	1445	47	3.0	8.5	1035
JAN , 1982					
04...	1150	35	3.5	3.0	930
FEB					
09...	1350	30	2.5	--	950
MAR					
08...	1010	36	3.0	--	967
APR					
05...	1645	36	7.0	2.0	1070
MAY					
10...	1035	38	14.0	11.0	965
15...	1150	330	11.5	12.0	653
JUN					
10...	1040	59	16.0	21.5	1040
JUL					
13...	1430	135	20.0	31.5	650
AUG					
12...	0930	144	18.0	25.0	759
SEP					
09...	0950	92	18.0	21.5	723
06421500 - RAPID CR NEAR FARMINGDALE SD (LAT 43 56 31 LONG 102 51 12)					
OCT , 1981					
02...	1550	20	14.5	32.0	1245
DEC					
04...	1145	17	.0	7.5	1115
FEB , 1982					
09...	1705	31	.0	--	1080
MAR					
22...	1115	41	1.0	9.0	1020
APR					
28...	1010	24	9.5	13.0	1120
MAY					
10...	1230	19	15.0	12.5	1040
JUN					
10...	1315	70	19.0	29.0	1020
JUL					
13...	1115	124	21.5	29.5	593
AUG					
11...	1605	158	20.0	26.5	810
SEP					
07...	1645	103	22.0	28.0	605
06422500 - BOXELDER CR NEAR NEMO SD (LAT 44 08 38 LONG 103 27 16)					
OCT , 1981					
15...	1250	3.2	10.0	12.0	347
DEC					
03...	1415	2.1	.5	2.0	386
FEB , 1982					
10...	1530	1.6	.0	-2.0	403
MAR					
22...	1710	6.3	1.5	2.0	307
APR					
09...	1145	3.8	1.0	5.0	300
MAY					
18...	1605	40	16.0	20.0	200
JUN					
10...	1635	25	15.0	20.0	230
JUL					
15...	1625	13	24.5	30.5	270
AUG					
12...	1705	12	23.0	25.0	266
06423010 - BOXELDER CR NEAR RAPID CITY SD (LAT 44 07 58 LONG 103 17 54)					
MAY , 1982					
24...	1415	8.0	15.0	18.5	220
25...	0930	.55	13.5	16.0	232

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06423500 - CHEYENNE R NEAR WASTA SD (LAT 44 04 52 LONG 102 24 03)					
OCT , 1981					
02...	1115	64	12.5	25.5	2420
DEC					
02...	1430	86	1.0	6.0	1720
FEB , 1982					
08...	1400	18	.0	--	2360
MAR					
12...	1540	316	.0	5.0	1210
APR					
06...	1210	102	5.0	6.5	2140
MAY					
06...	1530	61	14.5	18.0	2370
14...	1230	7150	11.5	14.0	582
JUN					
07...	1120	543	17.0	22.0	1460
JUL					
02...	1710	16500	21.0	33.5	559
AUG					
11...	1030	289	18.0	24.0	1260
SEP					
07...	1305	242	23.5	29.5	1570
06425100 - ELK CR NR RAPID CITY SD (LAT 44 14 25 LONG 103 09 03)					
JUN , 1982					
24...	1630	1.6	23.0	22.0	1180
AUG					
12...	1340	.09	26.0	27.0	1460
06425500 - ELK CR NEAR ELM SPRINGS SD (LAT 44 14 54 LONG 102 30 10)					
APR , 1982					
06...	1405	.04	6.5	4.5	5000
JUN					
07...	1535	16	24.5	22.0	1800
JUL					
26...	1045	22	23.0	22.5	1290
AUG					
10...	1035	.34	18.5	17.0	370
06428500 - BELLE FOURCHE R AT WY-SD STATE LINE (LAT 44 44 59 LONG 104 02 49)					
OCT , 1981					
07...	0820	13	9.0	11.0	1600
21...	1515	13	7.0	--	2110
DEC					
02...	1700	11	.5	--	2550
09...	0900	9.0	.0	-3.0	2100
FEB , 1982					
03...	1245	3.0	.0	--	3000
MAR					
31...	1650	36	11.0	--	--
APR					
14...	0900	22	17.5	23.0	2140
MAY					
11...	1710	20	11.5	9.0	2010
JUN					
22...	1410	93	26.0	30.5	1310
JUL					
12...	1700	31	28.5	--	--
15...	1510	29	30.5	34.0	1800
21...	1130	79	26.0	28.5	1830
AUG					
04...	0805	89	22.5	--	1370
SEP					
09...	1635	42	25.0	--	1600

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

06430000 - MURRAY DITCH AT WY-SD STATE LINE (LAT 44 34 35 LONG 104 02 58)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1981					
05...	1600	13	12.0	12.0	1070
JUL , 1982					
15...	0845	5.0	17.0	--	1280
AUG					
02...	1500	20	17.0	29.5	1550

06430500 - REDWATER CR AT WY-SD STATE LINE (LAT 44 34 26 LONG 104 02 54)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1981					
05...	1700	14	12.0	13.0	1170
DEC					
07...	1610	26	3.5	10.0	1280
07...	1620	26	3.5	10.0	1280
FEB , 1982					
01...	1545	27	4.5	-.5	1440
MAR					
16...	1450	27	9.5	10.5	1450
16...	1500	27	9.5	10.5	1450
APR					
13...	1440	27	14.5	21.5	1500
13...	1450	27	14.5	21.5	1500
MAY					
11...	1535	26	10.5	9.0	1500
JUN					
22...	1050	39	17.0	25.5	1370
JUL					
15...	1050	27	18.5	30.0	1290
AUG					
02...	1630	6.8	19.5	25.0	1900
SEP					
10...	1300	13	17.5	31.0	1620

06431500 - SPEARFISH CR AT SPEARFISH SD (LAT 44 28 57 LONG 103 51 40)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
DEC , 1981					
07...	1200	35	4.0	20.0	370
FEB , 1982					
01...	1140	35	2.5	5.0	430
MAR					
16...	1115	39	5.0	7.0	405
APR					
13...	1010	54	5.5	19.0	420
MAY					
11...	1015	43	6.0	8.0	430
JUN					
16...	1320	66	10.5	27.0	373
JUL					
14...	1120	55	12.0	24.5	422
AUG					
02...	1105	50	13.0	24.5	430
SEP					
10...	1605	46	12.0	28.0	470

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

06433000 - REDWATER RIVER ABOVE BELLE FOURCHE SD (LAT 44 40 02 LONG 103 50 20)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1981					
07...	1045	107	10.5	18.0	1050
DEC					
09...	1120	120	1.0	4.5	1100
FEB , 1982					
03...	1610	101	.0	--	1500
MAR					
16...	1700	119	8.5	7.0	1190
APR					
13...	1625	141	13.5	--	1260
MAY					
12...	1510	124	10.5	15.0	1260
17...	1830	1770	11.0	18.0	620
JUN					
22...	1700	216	22.0	30.0	1060
JUL					
14...	1720	50	25.5	33.0	1320
AUG					
04...	1200	19	24.0	25.0	1470
SEP					
10...	0920	78	17.5	26.5	1390

06433500 - MAY CR AT BELLE FOURCHE SD (LAT 44 40 01 LONG 103 50 46)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
DEC , 1981					
08...	1645	.07	2.0	3.5	2800
MAR , 1982					
16...	1745	.73	.5	7.0	1860
APR					
14...	1615	1.0	15.5	20.5	2580
MAY					
13...	0740	.34	9.0	9.0	3700
JUN					
23...	0925	.90	20.5	29.0	2930

06434500 - INLET CANAL NEAR BELLE FOURCHE SD (LAT 44 42 14 LONG 103 49 23)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1981					
06...	1600	124	13.0	16.0	1120
NOV					
06...	1300	137	6.0	17.0	1080
06...	1330	137	6.0	--	1080
DEC					
08...	1515	134	2.5	--	1220
08...	1530	134	2.5	--	1220
JAN , 1982					
07...	1045	82	.0	-2.5	1290
07...	1100	82	.0	--	1290
FEB					
02...	1745	129	.0	--	1390
MAR					
17...	1615	165	7.0	--	--
APR					
15...	1000	167	11.0	--	1430
MAY					
12...	1600	147	11.0	14.5	1380
JUL					
16...	1200	57	24.0	30.0	1720
AUG					
04...	0950	106	22.0	27.0	1430
04...	1015	106	22.0	--	1430
SEP					
08...	1700	120	21.5	27.0	1460

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06436000 - BELLE FOURCHE R NEAR FRUITDALE SD (LAT 44 41 27 LONG 103 44 14)					
OCT , 1981					
07...	1200	5.3	13.5	20.0	1700
FEB , 1982					
11...	1605	2.6	.0	.0	2580
APR					
12...	1425	5.0	16.0	21.0	2400
MAY					
13...	1000	3.6	11.5	11.0	2570
24...	1650	316	14.0	16.5	960
JUN					
23...	1215	316	22.0	31.0	1230
JUL					
16...	0930	9.3	25.0	25.5	1810
AUG					
04...	1400	11	25.0	29.0	2180
SEP					
09...	1815	8.7	24.5	28.0	2200
06436170 - WHITEWOOD CREEK AT DEADWOOD SD (LAT 44 22 48 LONG 103 43 25)					
NOV , 1981					
06...	1040	9.6	6.5	14.0	820
FEB , 1982					
12...	1400	9.6	6.5	--	1380
MAR					
09...	1005	10	6.5	9.5	1190
APR					
16...	1030	28	6.5	-.5	710
MAY					
13...	1515	38	9.5	9.0	625
14...	1750	417	9.5	7.5	258
17...	1535	704	9.0	15.0	285
JUN					
16...	1055	35	13.0	25.5	680
JUL					
01...	1555	31	19.0	35.0	750
AUG					
17...	1100	16	--	--	860
SEP					
07...	1330	12	17.5	26.0	1110
06436190 - WHITEWOOD CREEK NEAR WHITEWOOD SD (LAT 44 32 30 LONG 103 34 16)					
NOV , 1981					
06...	1510	11	8.5	18.0	780
DEC					
07...	1040	13	3.0	--	920
FEB , 1982					
12...	1545	11	.5	--	1090
MAR					
09...	1255	20	3.0	13.0	1120
APR					
15...	1230	34	13.5	20.0	870
MAY					
13...	1315	38	10.5	10.5	810
14...	1535	559	9.5	12.0	470
JUN					
16...	1635	42	21.0	18.0	1080
JUL					
01...	1200	36	20.5	31.0	1160
AUG					
18...	1030	8.7	22.0	28.0	1440
SEP					
07...	1510	8.8	23.0	33.5	1460

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

06436760 - HORSE CR ABOVE VALE SD (LAT 44 39 08 LONG 103 21 59)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1981					
08...	1535	3.6	15.0	10.0	2800
NOV					
06...	1540	3.3	5.5	10.0	4600
DEC					
09...	1530	2.6	.0	--	4000
JAN , 1982					
07...	1400	.94	.0	1.0	4200
FEB					
11...	1400	1.6	.0	.0	6000
APR					
15...	1400	7.9	15.0	19.0	3780
MAY					
13...	1130	3.3	11.0	10.0	4750
JUN					
23...	1415	48	24.5	29.5	2070
JUL					
09...	1415	11	22.5	26.0	2780
AUG					
04...	1600	62	23.0	--	1880
SEP					
08...	1355	39	21.5	31.0	1900

06437000 - BELLE FOURCHE R NEAR STURGIS SD (LAT 44 30 47 LONG 103 08 11)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1981					
08...	1200	57	15.0	--	1340
08...	1210	57	15.0	10.0	1340
NOV					
06...	1135	42	5.0	17.0	2625
DEC					
03...	1330	48	.5	--	2400
03...	1350	48	.5	3.5	2400
JAN , 1982					
07...	1530	3.9	.0	.0	3300
FEB					
11...	1145	23	.0	.0	2920
APR					
15...	1600	107	15.0	18.0	2620
MAY					
17...	1215	9360	14.5	--	860
JUN					
24...	1115	506	17.0	18.0	1640
JUL					
13...	1145	184	27.0	33.0	2300
AUG					
12...	1200	405	22.0	31.0	1670
SEP					
08...	1120	337	23.0	34.0	1780

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06438000 - BELLE FOURCHE R NEAR ELM SPRINGS SD (LAT 44 22 11 LONG 102 33 56)					
OCT , 1981					
16...	1140	52	10.5	--	2100
NOV					
03...	1200	42	9.5	20.0	2000
03...	1230	42	9.5	--	2000
DEC					
02...	1115	48	.0	9.5	2380
JAN , 1982					
06...	1145	5.4	.0	-5.0	3900
MAR					
10...	1300	65	2.0	--	2360
APR					
06...	1650	217	2.5	3.0	1980
MAY					
04...	1300	68	17.0	19.0	2620
JUN					
24...	1440	673	23.0	--	1660
JUL					
07...	1300	364	24.5	30.0	1940
AUG					
10...	--	384	18.0	--	1900
10...	1215	384	18.0	22.0	1900
SEP					
02...	1330	288	23.5	28.0	1900
06439000 - CHERRY CR NEAR PLAINVIEW SD (LAT 44 44 38 LONG 102 03 11)					
APR , 1982					
02...	0915	1460	4.0	.0	495
30...	0950	5.5	12.0	20.5	1800
MAY					
17...	--	1660	--	--	--
28...	0915	179	17.5	18.0	1010
JUN					
28...	0955	19	26.0	28.0	1100
JUL					
22...	1000	.87	.3	31.5	--
06439300 - CHEYENNE R AT CHERRY CREEK SD (LAT 44 36 10 LONG 101 29 24)					
NOV , 1981					
20...	1100	170	.5	--	2200
JAN , 1982					
08...	1540	35	.1	--	3430
MAR					
09...	1220	264	1.0	--	2040
APR					
02...	1530	4270	4.6	--	675
MAY					
28...	1415	3310	20.0	--	1310
JUL					
22...	1210	385	27.8	--	2280
AUG					
20...	1320	853	26.5	--	1156
06441000 - BAD R NEAR MIDLAND SD (LAT 44 04 01 LONG 101 09 36)					
MAY , 1982					
14...	1525	24	14.5	13.5	1420
20...	--	--	--	--	3420
21...	--	--	--	--	5910

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06442500 - MEDICINE CR AT KENNEBEC SD (LAT 43 54 17 LONG 099 52 35)					
MAR , 1982					
11...	1705	21	.5	14.5	425
APR					
12...	1000	7.1	10.5	11.0	780
MAY					
14...	--	1350	--	--	--
JUN					
04...	1525	30	18.5	20.0	610
JUL					
02...	1245	12	24.0	26.0	410
29...	1425	.25	30.5	32.5	--
AUG					
26...	1620	68	16.5	20.5	310
06442950 - CROW CR NEAR GANN VALLEY SD (LAT 43 59 29 LONG 099 13 07)					
MAR , 1982					
11...	1140	42	.5	9.0	455
APR					
12...	1545	16	14.5	25.0	890
JUN					
08...	1140	33	19.0	19.4	610
06446000 - WHITE R NEAR OGLALA SD (LAT 43 15 17 LONG 102 49 29)					
OCT , 1981					
01...	0940	.05	10.0	17.5	537
DEC					
01...	1245	10	.5	10.0	827
FEB , 1982					
01...	1740	13	.0	1.0	925
MAR					
15...	1450	49	4.0	17.0	588
APR					
13...	1530	25	14.0	21.0	740
MAY					
03...	1530	18	21.0	26.5	680
JUN					
01...	1435	65	16.0	20.0	710
JUL					
08...	1535	39	25.0	31.0	600
AUG					
02...	1340	10	25.0	37.5	1090
SEP					
01...	1255	21	22.0	28.0	560
06447000 - WHITE R NEAR KADOKA SD (LAT 43 45 09 LONG 101 31 28)					
OCT , 1981					
07...	1100	235	10.5	18.0	610
NOV					
17...	1125	16	8.0	15.0	575
MAR , 1982					
08...	1245	99	.0	-6.0	420
APR					
06...	1015	113	3.0	2.7	620
MAY					
04...	1105	32	16.5	12.5	--
20...	--	10600	--	--	--
21...	--	7990	--	--	--
27...	--	746	--	--	--
JUN					
02...	0945	231	16.0	16.5	600
29...	1115	128	18.0	15.0	510
JUL					
27...	--	3160	--	--	--
AUG					
24...	1110	614	14.0	15.5	670
SEP					
24...	1100	26	12.0	27.5	660

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06447500 - LITTLE WHITE R NEAR MARTIN SD (LAT 43 10 00 LONG 101 37 47)					
OCT , 1981					
07...	1540	12	13.0	20.0	--
NOV					
17...	1550	13	6.0	20.0	200
JAN , 1982					
13...	0850	3.8	--	--	370
MAR					
09...	0800	29	.0	2.0	235
APR					
06...	1310	29	4.0	5.5	330
MAY					
04...	1610	16	15.0	15.5	245
JUN					
02...	1125	31	13.5	12.0	440
30...	0745	14	19.0	18.0	407
JUL					
27...	1200	8.6	28.0	30.0	430
AUG					
24...	1630	5.6	18.0	15.0	275
SEP					
22...	1340	9.7	18.5	27.5	220
06449000 - LAKE CR BELOW REFUGE NEAR TUTHILL SD (LAT 43 08 46 LONG 101 30 38)					
OCT , 1981					
07...	1400	.10	17.0	21.5	--
NOV					
17...	1445	2.0	9.0	20.0	550
JAN , 1982					
12...	1345	14	--	--	520
MAR					
08...	1545	26	2.0	-2.0	295
APR					
06...	1130	38	4.5	5.5	340
MAY					
04...	1340	24	16.5	16.0	355
JUN					
07...	1040	22	19.5	23.0	440
29...	1630	71	--	--	431
JUL					
27...	1250	12	29.0	30.5	530
06449100 - LITTLE WHITE R NEAR VETAL SD (LAT 43 06 03 LONG 101 13 49)					
OCT , 1981					
08...	0805	22	10.5	11.5	--
20...	1315	25	10.0	5.5	--
NOV					
18...	0745	31	4.5	.5	280
JAN , 1982					
13...	1110	25	.0	-5.0	330
MAR					
09...	1030	73	.0	12.5	265
17...	1055	70	7.5	9.5	--
APR					
07...	0800	69	.5	3.0	325
MAY					
05...	0800	52	11.0	7.5	--
JUN					
07...	1210	64	18.5	25.0	450
29...	1335	101	20.5	17.5	420
JUL					
27...	1430	50	30.5	30.0	490
AUG					
24...	1325	21	17.0	16.0	370
SEP					
22...	1130	50	18.5	20.5	335

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06449300 - LITTLE WHITE R ABV ROSEBUD SD 38N30W18DBC (LAT 43 15 47 LONG 100 55 02)					
OCT , 1981					
28...	1250	68	11.5	--	270
NOV					
18...	0935	74	4.3	--	580
DEC					
17...	1300	9.9	-1.0	--	460
JAN , 1982					
13...	1530	36	.0	--	347
FEB					
10...	1110	55	.2	--	290
MAR					
09...	1230	131	4.6	--	262
APR					
07...	1245	114	5.9	--	309
MAY					
05...	0935	102	12.1	--	300
JUN					
03...	0830	160	12.1	--	344
30...	1000	160	19.6	--	360
JUL					
28...	0715	104	21.9	--	432
AUG					
25...	0815	55	16.7	--	307
06449400 - ROSEBUD CK AT ROSEBUD SD (LAT 43 14 09 LONG 100 51 12)					
OCT , 1981					
08...	1130	6.1	12.0	16.0	--
NOV					
18...	1135	6.5	6.0	1.7	350
JAN , 1982					
13...	1400	6.2	.0	--	--
MAR					
09...	1455	11	6.0	--	340
APR					
07...	1205	7.2	5.0	2.5	420
MAY					
05...	1115	.65	10.5	11.5	375
JUN					
02...	1410	9.5	19.0	20.5	640
30...	1115	6.4	21.5	26.5	343
JUL					
27...	1600	7.0	31.5	31.0	320
AUG					
25...	0955	5.0	14.0	17.5	385
SEP					
21...	1445	6.1	17.0	28.0	350
06449500 - LITTLE WHITE R NEAR ROSEBUD SD (LAT 43 19 32 LONG 100 53 00)					
OCT , 1981					
08...	1240	73	14.0	18.0	--
NOV					
18...	1340	83	4.0	1.0	290
JAN , 1982					
14...	0840	82	--	--	320
MAR					
10...	0750	101	4.0	10.0	275
APR					
07...	1005	97	3.5	1.5	370
MAY					
05...	1235	110	14.5	14.5	290
JUN					
03...	0925	204	12.5	14.0	360
30...	1245	168	22.0	24.5	380
JUL					
28...	0825	106	24.0	30.0	440
AUG					
25...	1110	62	15.0	--	--
SEP					
21...	1545	81	21.0	29.0	345

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

06450500 - LITTLE WHITE R BELOW WHITE RIVER SD (LAT 43 36 04 LONG 100 44 52)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1981					
06...	1440	69	--	26.5	--
NOV					
18...	1705	80	4.0	1.0	300
JAN , 1982					
14...	1330	64	.0	2.0	340
MAR					
10...	1110	165	3.0	13.0	300
APR					
08...	0830	131	2.0	-1.0	350
MAY					
05...	1555	106	15.0	15.5	--
JUN					
03...	1100	250	19.5	21.0	580
30...	1455	169	--	--	420
JUL					
28...	1000	102	27.0	30.0	430
AUG					
25...	1400	57	20.0	26.5	380
SEP					
21...	1230	82	18.5	27.0	340

06452000 - WHITE R NEAR OACOMA SD (LAT 43 44 54 LONG 099 33 22)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
NOV , 1981					
20...	1000	53	.5	--	455
JAN , 1982					
20...	1245	37	1.8	--	528
MAR					
29...	1100	825	3.0	--	--
30...	1050	732	2.0	--	--
31...	1100	703	2.0	--	--
APR					
01...	1050	654	3.0	--	--
03...	1100	1770	1.0	--	--
05...	1100	661	2.0	--	--
06...	1045	608	1.0	--	--
12...	1100	545	11.5	--	667
MAY					
07...	1025	108	11.0	--	520
JUN					
04...	1335	1000	18.5	--	--
04...	1340	1060	18.5	--	557
JUL					
02...	1030	1850	22.0	--	--
29...	1320	3030	24.8	--	568
AUG					
26...	1215	579	22.6	--	520
26...	1250	583	22.5	--	--
SEP					
20...	1135	416	13.0	--	--

06453000 - MISSOURI R AT FORT RANDALL SD (LAT 43 03 54 LONG 098 33 11)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
NOV , 1981					
19...	1100	12800	8.0	--	880
JAN , 1982					
18...	1400	18800	1.0	--	510
MAR					
02...	1200	13600	2.0	--	960
MAY					
11...	1200	33600	9.0	--	850
JUL					
13...	1100	32600	22.0	--	830
AUG					
17...	1300	36900	25.0	--	800

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06464500 - KEYA PAHA R AT WEWELA SD (LAT 43 01 42 LONG 099 46 45)					
OCT , 1981					
09...	0925	22	11.0	9.0	410
NOV					
19...	1145	24	.0	-4.0	410
JAN , 1982					
20...	--	11	--	--	--
MAR					
10...	1555	112	5.5	12.0	380
APR					
09...	1640	73	4.5	10.0	500
MAY					
06...	1140	47	13.5	15.0	435
JUN					
03...	1610	164	17.5	18.0	530
JUL					
01...	1115	86	20.0	21.5	490
28...	1510	61	29.0	33.0	440
AUG					
26...	0925	47	13.5	13.0	425
SEP					
21...	0925	50	11.0	4.0	360
06467500 - MISSOURI R AT YANKTON SD (LAT 42 51 58 LONG 097 23 37)					
OCT , 1981					
07...	1430	31400	15.0	17.0	840
DEC					
08...	1635	13600	2.5	4.5	860
MAR , 1982					
17...	1305	18600	2.0	4.5	710
APR					
23...	1330	27800	9.0	23.0	830
MAY					
26...	1225	27200	--	--	760
JUN					
23...	1230	31000	21.0	27.5	760
JUL					
20...	1730	28200	26.5	30.0	820
SEP					
22...	1350	32600	16.5	25.0	820
06471000 - JAMES R AT COLUMBIA SD (LAT 45 36 13 LONG 098 18 36)					
NOV , 1981					
13...	1030	4.7	5.5	--	1300
JAN , 1982					
07...	1600	7.8	.5	--	1440
FEB					
25...	1555	5.0	.0	.0	1800
MAR					
16...	1600	26	.0	--	490
APR					
02...	0955	-380	.5	9.0	170
05...	1700	-806	.0	--	250
07...	1005	-290	.0	-5.0	270
13...	0700	518	4.0	1.0	210
21...	1005	885	8.0	9.0	820
30...	1125	839	10.0	14.5	620
MAY					
13...	1000	673	12.0	--	2110
25...	0950	472	17.0	17.0	640
JUN					
04...	1135	244	19.0	20.0	720
17...	1650	177	23.0	23.0	730
30...	1400	85	21.0	--	770
JUL					
28...	1415	93	26.0	31.5	780
AUG					
25...	1600	116	21.5	--	760
SEP					
23...	1250	94	15.0	20.0	770

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06471500 - ELM R AT WESTPORT SD (LAT 45 39 22 LONG 098 29 48)					
OCT , 1981					
15...	1235	4.0	10.0	--	800
NOV					
12...	1350	3.5	7.5	18.0	820
JAN , 1982					
07...	1335	1.9	.5	-12.0	1100
FEB					
25...	1205	3.1	.0	-3.0	1220
MAR					
24...	1100	37	.0	.0	240
APR					
01...	1555	1430	.5	15.0	210
06...	1030	1590	.0	-3.0	260
13...	1130	573	2.0	17.0	320
21...	1610	305	9.5	19.0	410
MAY					
25...	1215	68	17.5	18.5	900
JUN					
30...	0935	4.0	18.0	22.5	1120
JUL					
28...	1125	20	26.0	26.0	1120
AUG					
25...	1120	6.5	22.0	27.5	1170
SEP					
23...	0945	4.1	13.5	18.5	940
06473000 - JAMES R AT ASHTON SD (LAT 45 00 02 LONG 098 28 57)					
FEB , 1982					
24...	1625	26	.5	-6.0	1280
MAR					
16...	1200	9.2	.0	3.0	950
APR					
02...	1235	155	.5	7.0	--
07...	1400	362	.0	.0	610
12...	1540	436	6.0	17.0	400
20...	1445	806	11.0	12.0	320
MAY					
24...	1520	856	17.5	15.5	610
JUL					
01...	0925	248	21.5	26.0	840
27...	1550	51	27.5	32.5	960
AUG					
26...	1235	77	26.0	23.0	900
SEP					
24...	1035	79	16.0	15.0	800
06475000 - JAMES R NEAR REDFIELD SD (LAT 44 54 33 LONG 098 27 34)					
FEB , 1982					
24...	1210	38	.5	-3.0	630
MAR					
15...	0950	32	.0	3.0	810
APR					
02...	1140	455	6.0	14.0	400
05...	1305	898	.5	.0	400
12...	1300	774	6.0	16.5	480
20...	1135	887	9.5	6.5	360
29...	1430	914	--	--	500
MAY					
12...	1530	983	14.0	15.0	680
24...	1150	885	17.0	15.0	610
JUN					
03...	1115	689	--	--	--
JUL					
01...	1345	254	24.0	28.5	820
27...	1240	53	26.5	28.0	960
AUG					
26...	1020	63	26.0	27.0	920
SEP					
24...	1315	64	16.0	15.0	800

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06476000 - JAMES R AT HURON SD (LAT 44 21 49 LONG 098 11 56)					
FEB , 1982					
23...	1520	137	--	--	--
26...	1300	66	1.0	--	700
MAR					
01...	1100	75	.0	.0	--
APR					
05...	1500	809	2.0	--	720
09...	1210	757	--	2.0	--
13...	1535	796	8.0	19.0	--
30...	1530	983	15.0	--	420
MAY					
18...	1200	1040	18.0	--	690
JUN					
11...	1300	824	21.0	--	690
24...	1525	363	21.0	21.5	760
JUL					
27...	1630	83	28.0	--	890
30...	1100	70	--	23.0	--
AUG					
05...	1225	52	--	--	--
SEP					
03...	1200	143	23.0	--	550
30...	1000	73	14.0	--	970
06476500 - SAND CR NEAR ALPENA SD (LAT 44 09 15 LONG 098 26 06)					
MAR , 1982					
04...	1450	12	.5	-5.0	330
15...	0945	11	.5	3.0	320
APR					
07...	0920	3.6	2.0	-2.0	610
MAY					
18...	1505	3.1	24.0	35.0	1300
JUN					
24...	0950	.09	16.0	16.0	1500
06477000 - JAMES R NEAR FORESTBURG SD (LAT 43 58 26 LONG 098 04 14)					
DEC , 1981					
14...	1240	3.3	1.5	-5.0	1170
MAR , 1982					
15...	1225	60	.5	6.5	780
APR					
07...	1430	744	1.0	1.0	--
14...	1105	794	10.0	27.0	450
14...	1140	--	10.0	--	--
30...	1050	882	14.0	13.0	--
MAY					
18...	0940	1020	--	--	--
JUN					
07...	1210	713	19.5	19.0	--
JUL					
12...	1310	140	22.0	25.0	--
AUG					
10...	1115	28	23.0	27.5	1020
SEP					
17...	1015	107	13.5	14.5	--

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06477500 - FIRESTEEL CR NEAR MOUNT VERNON SD (LAT 43 46 30 LONG 098 14 33)					
OCT , 1981					
09...	0945	.02	12.0	12.0	3000
DEC					
10...	1150	.11	1.0	.0	2650
FEB , 1982					
22...	1400	30	1.0	4.0	310
26...	1325	13	.5	8.0	540
MAR					
04...	1150	81	.5	-3.5	240
16...	1110	47	1.0	4.0	410
APR					
13...	1040	8.9	11.5	14.5	860
MAY					
28...	1050	26	16.0	12.5	1270
JUN					
22...	1050	6.1	14.0	20.0	980
JUL					
23...	1140	.14	28.0	25.5	1530
AUG					
26...	1245	.09	28.0	30.0	1870
SEP					
20...	1240	.06	15.0	13.5	2010
06478052 - ENEMY CR NEAR MITCHELL SD (LAT 43 38 33 LONG 097 59 09)					
FEB , 1982					
22...	1205	4.7	1.0	10.0	780
MAR					
03...	1600	.16	.0	-5.0	--
APR					
13...	1245	.10	--	>.2	--
MAY					
20...	1030	.03	11.5	17.0	1580
JUN					
01...	1200	106	15.0	15.0	--
07...	1545	17	22.0	22.5	--
22...	1345	1.4	18.5	27.0	--
06478053 - PIERRE CREEK NR ALEXANDRIA SD (LAT 43 37 52 LONG 097 46 00)					
OCT , 1981					
08...	1545	2.1	13.0	17.0	2400
DEC					
10...	1445	2.8	1.5	-.5	2370
FEB , 1982					
03...	1525	2.4	.0	-20.5	1900
22...	1640	80	1.5	4.5	450
MAR					
03...	1330	3.4	1.0	-5.0	1440
APR					
15...	1545	4.8	19.0	25.5	2500
MAY					
28...	0845	3.6	8.0	12.0	2540
JUN					
22...	1505	1.9	24.0	28.0	2410
JUL					
23...	0910	2.4	18.5	20.5	2310
AUG					
18...	0930	2.0	14.0	25.0	2300
SEP					
20...	1510	2.1	16.0	19.0	2390
06478320 - PLUM CREEK NR MILLTOWN SD (LAT 43 25 05 LONG 097 46 13)					
FEB , 1982					
21...	1540	48	1.5	10.0	280
JUN					
01...	1530	6.4	22.5	25.0	--
09...	0920	.99	15.0	11.5	930

> More than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06478390 - WOLF CR NEAR CLAYTON SD (LAT 43 22 18 LONG 097 36 12)					
OCT , 1981					
20...	1200	.47	8.0	15.0	1700
DEC					
09...	1620	3.3	1.5	1.0	2400
FEB , 1982					
22...	1420	237	.5	18.5	350
MAR					
03...	1035	9.3	.0	-9.0	510
16...	1455	14	1.0	4.0	1300
APR					
13...	1455	7.9	18.0	20.0	2160
MAY					
25...	1200	2.9	16.5	16.0	2330
JUN					
23...	0950	6.9	20.0	25.0	1620
JUL					
22...	1545	3.0	30.0	29.0	1930
AUG					
16...	1150	.35	16.0	23.0	2330
SEP					
21...	1120	.56	13.0	17.5	2260
06478420 - LONETREE CREEK AT OLIVET SD (LAT 43 13 35 LONG 097 40 44)					
DEC , 1981					
09...	1430	.01	1.0	-1.5	1670
FEB , 1982					
21...	1715	85	.0	15.5	420
MAR					
02...	1200	1.9	.0	-9.0	--
APR					
14...	1025	2.1	22.0	24.5	2450
MAY					
07...	1015	.26	10.0	20.0	--
20...	1500	.72	17.0	17.0	--
27...	1720	4.9	18.0	25.0	--
JUN					
02...	1300	68	15.0	16.0	--
09...	1145	6.4	17.0	14.0	1800
23...	1200	1.7	20.0	27.0	--
JUL					
22...	1030	.10	24.0	26.5	1760
SEP					
21...	1315	.15	12.0	18.5	1680
06478500 - JAMES R NEAR SCOTLAND SD (LAT 43 11 09 LONG 097 38 07)					
OCT , 1981					
28...	1305	7.1	10.5	22.0	2050
NOV					
18...	1200	8.4	8.5	--	2000
JAN , 1982					
19...	1300	9.8	.5	--	2610
MAR					
03...	1300	183	2.0	--	800
APR					
14...	1325	810	10.5	26.0	--
MAY					
12...	1430	985	18.0	--	470
JUN					
08...	1615	1120	22.0	25.0	--
JUL					
14...	1200	179	27.5	--	950
AUG					
18...	1400	29	26.0	--	1110
SEP					
21...	1315	116	14.5	16.0	--

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06478513 - JAMES RIVER NR YANKTON SD (LAT 42 59 45 LONG 097 22 10)					
OCT , 1981					
07...	1700	5.8	14.0	16.5	2150
DEC					
10...	1135	18	--	.0	1970
FEB , 1982					
02...	1450	14	.0	-9.5	2650
MAR					
02...	1500	382	.0	-4.5	--
16...	1735	166	1.5	7.5	--
APR					
15...	1155	765	16.5	22.5	--
MAY					
25...	1700	1040	16.0	16.0	--
JUN					
08...	1135	1330	21.0	23.0	--
22...	1320	559	24.0	26.5	870
JUL					
20...	1515	245	26.5	29.0	1040
AUG					
17...	1120	38	18.5	24.5	--
SEP					
21...	1630	112	16.0	20.0	--
06478514 - BEAVER CREEK NR YANKTON SD (LAT 42 57 32 LONG 097 21 40)					
DEC , 1981					
09...	1635	<.01	2.0	-3.0	1220
FEB , 1982					
22...	1100	74	.0	13.0	560
MAR					
02...	1630	.34	.0	-9.0	--
APR					
14...	1615	.10	19.0	27.0	1380
MAY					
06...	0950	.02	10.0	13.0	--
21...	0955	869	8.5	4.5	--
21...	1640	634	13.0	13.0	--
22...	0815	256	6.5	5.0	--
26...	1550	109	16.0	16.0	--
JUN					
02...	0840	213	14.0	12.0	--
22...	1430	.09	25.0	27.5	1020
JUL					
20...	1615	17	27.0	29.0	920
AUG					
02...	1610	.01	30.5	35.5	1250
17...	0940	.01	14.0	19.0	1350
SEP					
22...	1520	.03	17.0	25.0	1260
06478515 - MISSOURI R NEAR GAYVILLE SD (LAT 42 51 01 LONG 097 13 12)					
OCT , 1981					
20...	1245	34700	12.0	17.0	830
06478540 - LITTLE VERMILLION R NEAR SALEM SD (LAT 43 47 39 LONG 097 22 02)					
JUN , 1982					
17...	1340	1.0	23.5	25.0	700

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06478690 - WEST FORK VERMILLION R NEAR PARKER SD (LAT 43 24 55 LONG 097 12 18)					
OCT , 1981 23...	1145	<.01	4.0	-1.5	1360
FEB , 1982 25...	1350	130	.0	-4.0	300
MAR 25...	1310	8.2	5.0	3.0	870
APR 13...	1330	8.8	14.5	16.0	1440
MAY 18...	1700	7.3	23.0	21.5	1730
JUN 17...	1050	6.1	22.0	23.0	1110
JUL 13...	1050	.11	14.5	25.0	1440
AUG 10...	1630	.04	22.0	27.0	1320
SEP 10...	1100	4.8	13.0	17.0	770
06479000 - VERMILLION R NEAR WAKONDA SD (LAT 42 59 27 LONG 096 57 49)					
OCT , 1981 06...	1455	.62	15.0	17.0	1200
NOV 17...	1615	1.1	7.0	12.0	1110
DEC 09...	1440	3.8	1.5	1.0	1570
JAN , 1982 13...	1635	1.0	.0	-20.0	1500
FEB 01...	1430	.82	.0	-8.0	970
24...	1620	336	.0	-4.0	370
MAR 17...	1610	29	.5	4.0	820
APR 15...	1435	60	19.5	32.5	1450
MAY 27...	1425	437	17.0	26.0	1280
JUN 23...	1510	59	25.0	31.0	1400
JUL 21...	1620	44	24.5	24.5	1290
AUG 16...	1415	9.1	18.0	20.5	1220
SEP 23...	1030	8.2	13.5	21.5	1040
06479438 - BIG SIOUX R NEAR WATERTOWN SD (LAT 45 00 22 LONG 097 09 53)					
OCT , 1981 02...	0905	.04	6.5	1.0	570
20...	1245	.13	7.5	7.5	550
DEC 14...	1315	.02	2.0	.0	640
MAR , 1982 25...	1030	4.0	.0	-1.0	250
APR 06...	1235	55	1.5	12.5	330
22...	1420	16	11.0	23.0	560
MAY 26...	1145	12	16.0	18.0	690
JUN 29...	0925	1.7	18.0	21.0	540
AUG 04...	0915	.23	15.5	18.5	570
24...	1100	.10	22.0	20.0	590
SEP 22...	1115	.01	15.0	18.0	560

< Less than.

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06479515 - WILLOW CR NEAR WATERTOWN SD (LAT 44 54 17 LONG 097 03 31)					
OCT , 1981					
01...	1315	.08	11.0	13.0	1350
20...	1500	.59	9.0	14.0	1260
DEC					
14...	1505	.28	1.0	2.0	1520
FEB , 1982					
25...	1020	12	.5	1.5	270
MAR					
25...	1315	3.8	.0	-1.0	490
APR					
06...	1525	14	2.5	3.5	590
22...	1620	3.6	13.5	10.5	790
MAY					
26...	1400	2.3	15.0	15.0	970
JUN					
29...	0720	.86	19.0	14.0	970
AUG					
04...	1040	.04	17.0	21.5	1120
24...	0905	.08	20.0	18.0	1230
SEP					
22...	0920	.22	11.0	10.0	1200
06479525 - BIG SIOUX R NEAR CASTLEWOOD SD (LAT 44 43 54 LONG 097 02 39)					
OCT , 1981					
01...	1125	3.3	7.0	5.0	1080
21...	0950	5.6	8.5	5.5	1070
DEC					
15...	1100	4.1	.5	-12.0	1370
MAR , 1982					
26...	0900	11	.0	-4.0	670
APR					
01...	0945	126	.0	4.0	260
07...	0955	26	.5	-.5	670
23...	1040	15	11.5	22.0	900
MAY					
27...	0850	12	14.5	16.5	1040
JUN					
28...	1310	5.6	27.0	31.5	960
AUG					
03...	1500	6.2	23.0	24.0	1250
23...	1620	3.1	27.0	24.0	1080
SEP					
21...	1435	4.7	18.0	17.0	930
06479529 - STRAY HORSE CR NEAR CASTLEWOOD SD (LAT 44 43 52 LONG 096 57 23)					
OCT , 1981					
01...	0950	.03	7.0	5.0	1240
21...	1120	.35	5.5	7.5	1320
DEC					
15...	1305	.25	1.0	-.0	1500
FEB , 1982					
24...	1320	23	1.0	-4.0	320
MAR					
25...	1500	5.2	.0	1.0	570
APR					
01...	1230	40	1.5	7.0	320
23...	1225	2.6	13.0	28.0	760
MAY					
27...	1115	2.0	16.0	19.0	970
JUN					
28...	1245	.87	26.5	31.0	980
AUG					
03...	1345	.02	17.0	19.0	950
23...	1335	.01	28.0	29.0	1060
SEP					
21...	1315	.23	17.5	16.5	1100

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06479640 - HIDEWOOD CR NEAR ESTELLINE SD (LAT 44 36 42 LONG 096 54 17)					
MAR , 1982					
26...	1245	19	.0	-4.0	590
APR					
07...	1435	27	1.0	.5	800
22...	1250	9.3	12.0	22.5	920
MAY					
27...	1325	5.5	17.0	20.0	1140
JUN					
28...	1115	2.4	25.0	37.0	990
AUG					
03...	1130	.98	21.5	24.0	1250
23...	1255	.01	27.5	24.5	1100
SEP					
21...	1150	.01	18.0	15.0	920
06479980 - MEDARY CREEK NEAR BROOKINGS, SD (LAT 44 13 27 LONG 096 46 06)					
OCT , 1981					
22...	0905	.77	3.0	3.5	760
DEC					
16...	0925	.65	.5	-12.0	820
MAR , 1982					
30...	1600	93	2.0	2.0	540
APR					
23...	1100	44	10.0	24.5	810
MAY					
21...	1010	30	13.0	12.0	900
JUN					
14...	1135	25	18.5	17.5	820
JUL					
14...	1315	15	25.5	30.0	730
AUG					
13...	1020	7.4	18.5	19.5	830
SEP					
08...	1115	5.0	11.5	16.0	740
06480000 - BIG SIOUX RIVER NEAR BROOKINGS SD (LAT 44 10 48 LONG 096 44 55)					
OCT , 1981					
22...	1110	14	4.5	1.5	1000
DEC					
16...	1205	11	.5	-10.0	1100
MAR , 1982					
31...	1100	379	2.5	6.5	520
APR					
23...	0910	193	10.0	16.0	910
MAY					
20...	1520	123	18.0	23.0	1000
JUN					
14...	1300	126	19.0	17.0	900
JUL					
14...	1130	48	24.5	27.0	860
AUG					
13...	0845	30	18.5	19.5	930
SEP					
08...	1315	25	12.0	14.0	870

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06480650 - FLANDREAU CREEK ABOVE FLANDREAU SD (LAT 44 03 45 LONG 096 29 14)					
OCT , 1981					
22...	1315	3.1	5.0	8.5	1020
DEC					
16...	1525	2.6	1.0	-10.0	1230
FEB , 1982					
23...	1355	42	1.0	-2.5	210
MAR					
23...	1145	29	2.0	10.5	520
31...	1035	110	4.0	11.0	370
APR					
08...	0935	17	.5	-1.0	720
22...	1600	30	12.5	18.5	830
MAY					
20...	1255	26	17.5	16.5	910
JUN					
15...	0910	9.1	17.5	20.5	840
JUL					
14...	0850	14	22.0	25.0	660
AUG					
04...	1215	5.3	25.0	29.0	860
12...	1305	2.5	19.0	20.0	870
SEP					
08...	1505	7.6	12.5	14.5	850
06481000 - BIG SIOUX R NEAR DELL RAPIDS SD (LAT 43 47 25 LONG 096 44 42)					
OCT , 1981					
27...	1400	20	9.0	--	880
NOV					
16...	1400	16	8.0	--	870
DEC					
17...	1500	21	1.0	--	850
JAN , 1982					
28...	1230	7.3	1.5	--	1470
MAR					
23...	1630	455	2.0	--	460
APR					
14...	1030	495	11.0	20.0	730
29...	1000	203	11.5	--	880
MAY					
14...	0930	140	16.0	--	870
JUN					
15...	1230	260	20.0	--	840
JUL					
16...	1100	1340	26.5	--	540
AUG					
04...	1420	925	24.5	31.0	240
12...	1000	65	19.0	--	760
SEP					
09...	0915	68	13.0	--	790
06481500 - SKUNK CR AT SIOUX FALLS SD (LAT 43 32 01 LONG 096 47 26)					
OCT , 1981					
22...	1455	1.0	6.5	6.5	830
DEC					
18...	1045	1.3	1.0	-15.0	1230
FEB , 1982					
04...	1105	.23	.5	-13.0	1530
23...	1030	675	.0	-2.0	240
MAR					
25...	0930	65	2.0	2.0	670
APR					
13...	1600	33	15.0	25.0	1000
MAY					
19...	1500	29	24.0	29.0	1170
JUN					
17...	0810	10	20.0	18.5	1140
JUL					
13...	1250	3.3	23.0	27.0	1040
AUG					
11...	1335	36	33.0	23.0	610
SEP					
01...	1415	2240	--	--	--
10...	0915	624	12.0	24.0	360
24...	0805	24	15.5	12.0	1070

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06482020	- BIG SIOUX R AT NORTH CLIFF AVE AT SIOUX FALLS SD (LAT 43 34 01 LONG 096 42 39)				
OCT , 1981					
27...	1705	37	15.5	14.5	2050
JAN , 1982					
21...	1155	5.0	.5	-10.0	1680
FEB					
04...	1330	4.2	1.0	-10.0	1530
23...	1540	--	.0	.0	350
MAR					
24...	1335	594	3.0	6.5	420
APR					
15...	1015	569	14.5	18.5	750
MAY					
20...	0905	230	20.0	15.0	910
JUN					
16...	1105	196	21.0	23.0	900
JUL					
13...	1455	172	24.5	23.5	750
AUG					
05...	1045	1010	26.0	29.5	380
11...	1115	176	21.5	25.0	800
SEP					
02...	1120	1630	--	28.0	--
09...	1505	150	14.5	16.0	800
06482610	- SPLIT ROCK CR AT CORSON SD (LAT 43 36 59 LONG 096 33 54)				
OCT , 1981					
23...	0900	10	1.5	-3.5	640
DEC					
17...	1010	11	1.0	-20.0	820
MAR , 1982					
24...	1045	277	2.0	5.0	340
APR					
14...	1400	96	15.5	28.5	700
MAY					
19...	1130	117	20.0	23.5	710
JUN					
16...	0815	57	17.5	15.5	770
JUL					
13...	1730	28	25.0	30.0	500
AUG					
04...	1710	1570	25.0	35.5	210
05...	1350	452	27.0	33.0	180
11...	0855	33	19.5	23.5	510
SEP					
09...	1315	29	15.0	24.0	750
06485500	- BIG SIOUX R AT AKRON IA (LAT 42 49 42 LONG 096 33 45)				
OCT , 1981					
28...	0900	181	6.0	18.0	990
NOV					
17...	1200	130	7.5	--	1120
JAN , 1982					
20...	1230	45	.5	--	1560
MAR					
04...	1430	2250	2.0	--	360
18...	1040	2280	--	--	--
APR					
16...	1005	1420	15.5	12.5	810
MAY					
13...	1230	675	19.0	--	800
JUN					
24...	1020	675	23.0	25.5	880
JUL					
15...	1100	842	26.6	--	820
AUG					
19...	1100	306	24.5	--	730
SEP					
23...	1430	664	16.0	25.0	940

The following miscellaneous tables of water-quality data were retrieved from STORET for a network of surface water quality stations. The water samples were collected by USGS personnel and analyzed by the U.S. Army Corps of Engineers in Omaha, Nebraska.

In the body of the tables under the heading "DATE" the code CP(S)-F means that single grab samples were collected and then composited with a single sample.

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)

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      INITIAL DATE                                 81/10/05  81/10/05  81/10/05  81/10/05  81/10/05  81/10/05  81/10/05  81/10/05
      INITIAL TIME-DEPTH-BOTTOM                    1315 0000 1315 0001 1315 0003 1315 0009 1315 0016 1315 0022 1315 0029 1315 0036
00010  WATER      TEMP       CENT                  12.6      12.7      12.7      12.6      12.4      12.4      12.4      12.4
00011  WATER      TEMP       FAHN                  54.7      54.9      54.9      54.7      54.3      54.3      54.3      54.3
00020   AIR       TEMP       CENT                  11.5
00025 BAROMTRC  PRESSURE   MM OF HG                 729
00032  CLOUD     COVER     PERCENT                  100
00035   WIND    VELOCITY     MPH                   15.0
00036   WIND    DIR.FROM   NORTH=0                  315
00077  TRANSP    SECCHI     INCHES                   82
00094 CNDUCTVY  FIELD      MICROMHO                 760       760       760       762       760       760       760       760
00299    DO      PROBE       MG/L                   8.5       8.5       8.5       8.5       8.5       8.5       8.6       8.6
00301    DO      SATUR     PERCENT                 80.2      80.2      80.2      80.2      78.7      78.7      79.6      79.6
00400    PH                   SU                   8.30      8.30      8.30      8.30      8.30      8.30      8.30      8.30
      INITIAL DATE                                 81/10/05  81/10/05
      INITIAL TIME-DEPTH-BOTTOM                    1315 0042 1315 0005
      FINAL DATE                                             81/10/05
      FINAL TIME-NUMBER OF SAMPLES                           1340 6
      CP-SPACE OR TIME-STATISTICAL FUNC                      CP-S
00010  WATER      TEMP       CENT                  12.4
00011  WATER      TEMP       FAHN                  54.3
00076   TURB    TRBIDMTR   HACH FTU                            9.0
00094 CNDUCTVY  FIELD      MICROMHO                 760
00299    DO      PROBE       MG/L                   8.6
00301    DO      SATUR     PERCENT                 79.6
00400    PH                   SU                   8.30
00410  T ALK     CACO3       MG/L                              170
00515 RESIDUE   DISS-105   C MG/L                              480
00530 RESIDUE   TOT NFLT     MG/L                                3
00610 NH3+NH4-   N TOTAL     MG/L                            0.030
00619 UN-IONZD   NH3-NH3     MG/L                            0.000
00620  NO3-N     TOTAL       MG/L                            0.010
00665 PHOS-TOT               MG/L P                          0.020
00900 TOT HARD   CACO3       MG/L                              254
00916 CALCIUM    CA-TOT      MG/L                             59.0
00927 MGNSIUM    MG,TOT      MG/L                             27.0
00940 CHLORIDE    TOTAL      MG/L                                7
00945 SULFATE    SO4-TOT     MG/L                              216
32216 CHLRPHYL   TOTAL       UG/L                            39.00
70507  PHOS-T    ORTHO       MG/L P                          0.000
71900 MERCURY    HG,TOTAL    UG/L                              0.0
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MISCELLANEOUS WATER QUALITY DATA

SPRING CREEK BASIN

LAKE POCASSE AT POLLOCK, SD (LAT 45 54 30 LONG 100 17 30)

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                                             81/10/06  81/10/06  81/10/06  81/10/06  81/10/06  81/10/06
      INITIAL DATE                           0930 0000 0930 0001 0930 0003 0930 0009 0930 0012 0930 0005
      INITIAL TIME-DEPTH-BOTTOM                                                                81/10/06
      FINAL DATE                                                                               0940 6
      FINAL TIME-NUMBER OF SAMPLES                                                             CP=8
      CP-SPACE OR TIME-STATISTICAL FUNC
00010  WATER      TEMP       CENT            10.5      10.5      10.5      10.5      10.5
00011  WATER      TEMP       FAHN            50.9      50.9      50.9      50.9      50.9
00020  AIR        TEMP       CENT            4.5
00025 BAROMTRC   PRESSURE   MM OF HG         736
00032  CLOUD      COVER     PERCENT          5
00035  WIND      VELOCITY    MPH             5.0
00036  WIND      DIR.FROM   NORTH=0          45
00076  TURB      TRBIDMTR   HACH FTU                                                            30.0
00077  TRANSP     SECCHI     INCHES          6
00094 CNDUCTVY   FIELD      MICROMHO         916       916       916       916       916
00299   DO        PROBE      MG/L            7.4       7.4       7.4       7.4       7.4
00301   DO        SATUR     PERCENT          66.7      66.7      66.7      66.7      66.7
00400   PH                    SU             8.40      8.50      8.50      8.50      8.50
00410  T ALK      CACO3      MG/L                                                                  282
00515 RESIDUE    DISS-105  C MG/L                                                                  642
00530 RESIDUE    TOT NFLT    MG/L                                                                   30
00610 NH3+NH4-   N TOTAL     MG/L                                                                0.080
00619 UN-IONZD   NH3-NH3     MG/L                                                                0.000
00620  NO3-N      TOTAL      MG/L                                                                0.090
00665 PHOS-TOT               MG/L P                                                              0.970
00900 TOT HARD    CACO3      MG/L                                                                  254
00916 CALCIUM     CA-TOT     MG/L                                                                 45.0
00927 MGNSIUM     MG,TOT     MG/L                                                                 36.0
00940 CHLORIDE    TOTAL      MG/L                                                                   31
00945 SULFATE    SO4-TOT     MG/L                                                                  156
32216 CHLRPHYL    TOTAL      UG/L                                                                67.00
70507  PHOS-T     ORTHO      MG/L P                                                              0.400
71900 MERCURY    HG,TOTAL    UG/L                                                                  0.0
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MISCELLANEOUS WATER QUALITY DATA

CHEYENNE RIVER BASIN

COLD BROOK RESERVOIR AT HOT SPRINGS, SD (LAT 43 27 19 LONG 103 29 19)

INITIAL DATE	81/10/02	81/10/02	81/10/02	81/10/02	81/10/02	81/10/02	81/10/02	81/10/02
INITIAL TIME-DEPTH-BOTTOM	1130 0000	1130 0001	1130 0003	1130 0009	1130 0016	1130 0022	1130 0027	1130 0005
FINAL DATE								81/10/02
FINAL TIME-NUMBER OF SAMPLES								1200 6
CP-SPACE OR TIME-STATISTICAL FUNC								CP=S
00010 WATER TEMP CENT	16.7	16.5	16.5	16.3	16.3	16.2	16.2	
00011 WATER TEMP FAHN	62.1	61.7	61.7	61.3	61.3	61.2	61.2	
00025 BAROMTRC PRESSURE MM OF HG	2608							
00032 CLOUD COVER PERCENT	40							
00035 WIND VELOCITY MPH	15.0							
00036 WIND DIR.FROM NORTH=0	180							
00076 TURB TRBIDMTR HACH FTU								5.0
00077 TRANSP SECCHI INCHES	109							
00094 CNDUCTVY FIELD MICROMHO	480	483	484	422	456	476	478	
00299 DO PROBE MG/L	7.3	6.9	6.0	6.4	6.6	7.0	7.0	
00301 DO SATUR PERCENT	75.3	71.1	61.9	64.6	66.0	70.0	70.0	
00400 PH SU	8.00	8.00	8.10	8.00	8.00	8.00	8.00	
00410 T ALK CACO3 MG/L								154
00515 RESIDUE DISS-105 C MG/L								300
00530 RESIDUE TOT NFLT MG/L								1
00610 NH3+NH4- N TOTAL MG/L								0.060
00619 UN-IONZD NH3-NH3 MG/L								0.000
00620 NO3-N TOTAL MG/L								0.060
00665 PHOS-TOT MG/L P								0.010
00900 TOT HARD CACO3 MG/L								207
00916 CALCIUM CA-TOT MG/L								38.0
00927 MGNSIUM MG,TOT MG/L								27.0
00940 CHLORIDE TOTAL MG/L								26
00945 SULFATE SO4-TOT MG/L								64
32216 CHLRPHYL TOTAL UG/L								2.00
70507 PHOS-T ORTHO MG/L P								0.000
71900 MERCURY HG,TOTAL UG/L								0.4

INITIAL DATE	82/01/26	82/01/26	82/01/26	82/01/26	82/01/26	82/01/26	82/01/26	82/01/26
INITIAL TIME-DEPTH-BOTTOM	1130 0000	1130 0001	1130 0003	1130 0009	1130 0016	1130 0022	1130 0029	1130 0033
00010 WATER TEMP CENT	1.0	3.8	4.0	4.0	4.1	4.6	4.6	4.6
00011 WATER TEMP FAHN	33.8	38.8	39.2	39.2	39.4	40.3	40.3	40.3
00020 AIR TEMP CENT	9.0							
00025 BAROMTRC PRESSURE MM OF HG	662							
00032 CLOUD COVER PERCENT	0							
00035 WIND VELOCITY MPH	5.0							
00036 WIND DIR.FROM NORTH=0	225							
00076 TURB TRBIDMTR HACH FTU	1.0							
00077 TRANSP SECCHI INCHES	398							
00094 CNDUCTVY FIELD MICROMHO	515	541	541	541	542	550	550	549
00299 DO PROBE MG/L	8.1	8.8	9.2	9.4	9.3	9.0	8.3	8.1
00301 DO SATUR PERCENT	57.0	67.2	70.2	71.6	71.0	70.5	64.8	63.3
00400 PH SU	7.90	8.00	7.90	7.90	7.80	7.70	7.60	7.70
00410 T ALK CACO3 MG/L	188							
00515 RESIDUE DISS-105 C MG/L	354							
00530 RESIDUE TOT NFLT MG/L	0							
00610 NH3+NH4- N TOTAL MG/L	0.020							
00619 UN-IONZD NH3-NH3 MG/L	0.000							
00620 NO3-N TOTAL MG/L	0.490							
00665 PHOS-TOT MG/L P	0.010							
00720 CYANIDE CN-TOT MG/L	0.000							
00900 TOT HARD CACO3 MG/L	268							
00916 CALCIUM CA-TOT MG/L	63.4							
00927 MGNSIUM MG,TOT MG/L	26.7							
00940 CHLORIDE TOTAL MG/L	12							
00945 SULFATE SO4-TOT MG/L	63							
01002 ARSENIC AS,TOT UG/L	5							
01012 BERYLIUM BE,TOT UG/L	0.00							
01027 CADMIUM CD,TOT UG/L	0							
01034 CHROMIUM CR,TOT UG/L	0							
01042 COPPER CU,TOT UG/L	0							
01045 IRON FE,TOT UG/L	100							
01051 LEAD PB,TOT UG/L	0							
01055 MANGNESE MN UG/L	30.0							
01067 NICKEL NI,TOTAL UG/L	0							
01077 SILVER AG,TOT UG/L	0.0							
01092 ZINC ZN,TOT UG/L	100							
01105 ALUMINUM AL,TOT UG/L	20							
01132 LITHIUM LI,TOT UG/L	30							
01147 SELENIUM SE,TOT UG/L	1							
32230 CHLRPHYL A MG/L	0.000							
39516 PCBS WHL SMPL UG/L	0.000							
70507 PHOS-T ORTHO MG/L P	0.000							
71900 MERCURY HG,TOTAL UG/L	0.0							

COLD BROOK RESERVOIR AT HOT SPRINGS, SD (LAT 43 27 19 LONG 103 29 19)--Continued

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         INITIAL DATE                                82/04/21  82/04/21  82/04/21  82/04/21  82/04/21  82/04/21  82/04/21  82/04/21
         INITIAL TIME-DEPTH-BOTTOM                  1030 0000 1030 0001 1030 0003 1030 0009 1030 0016 1030 0022 1030 0031 1030 0005
         FINAL DATE                                                                                                        82/04/21
         FINAL TIME-NUMBER OF SAMPLES                                                                                      1130 6
         CP-SPACE OR TIME-STATISTICAL FUNC                                                                                 CP-S
00010  WATER       TEMP      CENT                      9.5       9.4       9.4       9.3       9.3       9.1       9.1
00011  WATER       TEMP      FAHN                     49.1      48.9      48.9      48.7      48.7      48.4      48.4
00020   AIR        TEMP      CENT                     16.7
00032  CLOUD      COVER     PERCENT                     60
00035   WIND     VELOCITY     MPH                     20.0
00036   WIND     DIR.FROM   NORTH-0                      0
00078  TRANSP     SECCHI     METERS                   7.62
00094 CNDUCTVY   FIELD     MICROMHO                    536       536       537       537       537       538       537
00299    DO       PROBE      MG/L                     11.0      10.9      11.0      10.8      10.8      10.8      10.7
00301    DO       SATUR     PERCENT                   97.3      94.0      94.8      93.1      93.1      93.1      92.2
00400    PH                   SU                      8.20      8.20      8.30      8.30      8.30      8.30      8.30
00610 NH3+NH4-   N TOTAL     MG/L                                                                                      0.030
00615  NO2-N      TOTAL      MG/L                                                                                      0.000
00620  NO3-N      TOTAL      MG/L                                                                                      0.060
00625 TOT KJEL      N        MG/L                                                                                      0.100
00665 PHOS-TOT              MG/L P                                                                                     0.000
01045   IRON     FE,TOT      UG/L                                                                                        100
01055 MANGNESE     MN        UG/L                                                                                        0.0
32230 CHLRPHYL     A         MG/L                                                                                      0.000
39516   PCBS    WHL SMPL     UG/L                                                                                      0.000
         INITIAL DATE                                82/07/02  82/07/02  82/07/02  82/07/02  82/07/02  82/07/02  82/07/02  82/07/02
         INITIAL TIME-DEPTH-BOTTOM                  1100 0000 1100 0001 1100 0003 1100 0009 1100 0016 1100 0022 1100 0029 1100 0036
00010  WATER       TEMP      CENT                     22.3      22.1      22.0      19.3      16.4      13.8      11.6      11.2
00011  WATER       TEMP      FAHN                     72.1      71.8      71.6      66.7      61.5      56.8      52.9      52.2
00020   AIR        TEMP      CENT                     29.5
00035   WIND     VELOCITY     MPH                     20.0
00036   WIND     DIR.FROM   NORTH-0                    315
00078  TRANSP     SECCHI     METERS                   2.70
00094 CNDUCTVY   FIELD     MICROMHO                    553       552       554       620       620       470       444       474
00299    DO       PROBE      MG/L                      8.2       8.0       7.9       6.7       2.4       0.0       0.0       0.0
00301    DO       SATUR     PERCENT                   93.2      90.9      89.8      71.3      24.0       0.0       0.0       0.0
00400    PH                   SU                      8.00      8.00      8.10      7.40      7.30      7.40      7.30      7.20
         INITIAL DATE                                82/07/02
         INITIAL TIME-DEPTH-BOTTOM                  1100 0005
         FINAL DATE                                  82/07/02
         FINAL TIME-NUMBER OF SAMPLES               1210 6
         CP-SPACE OR TIME-STATISTICAL FUNC          CP-S
00076   TURB     TRBIDMTR  HACH FTU                    2.0
00410  T ALK      CACO3      MG/L                      192
00515 RESIDUE   DISS-105   C MG/L                      390
00610 NH3+NH4-  N TOTAL      MG/L                    0.000
00615  NO2-N     TOTAL       MG/L                    0.000
00619 UN-IONZD   NH3-NH3     MG/L                    0.000
00620  NO3-N     TOTAL       MG/L                    0.020
00625 TOT KJEL     N         MG/L                    0.500
00665 PHOS-TOT              MG/L P                   0.020
00720 CYANIDE     CN-TOT     MG/L                    0.000
00900 TOT HARD   CACO3       MG/L                      266
00916 CALCIUM    CA-TOT      MG/L                     62.0
00927 MGNSIUM    MG,TOT      MG/L                     27.0
00929 SODIUM     NA,TOT      MG/L                    16.30
00937 PTSSIUM    K,TOT       MG/L                     3.80
01002 ARSENIC    AS,TOT      UG/L                        6
01007 BARIUM     BA,TOT      UG/L                       83
01012 BERYLIUM   BE,TOT      UG/L                     0.00
01022 BORON      B,TOT       UG/L                       80
01027 CADMIUM    CD,TOT      UG/L                        0
01034 CHROMIUM   CR,TOT      UG/L                        0
01042 COPPER     CU,TOT      UG/L                        0
01045   IRON     FE,TOT      UG/L                       87
01051 LEAD       PB,TOT      UG/L                        0
01055 MANGNESE     MN        UG/L                      0.0
01067  NICKEL    NI,TOTAL    UG/L                        0
01077 SILVER     AG,TOT      UG/L                      0.0
01092 ZINC       ZN,TOT      UG/L                        0
01097 ANTIMONY   SB,TOT      UG/L                        0
01147 SELENIUM   SE,TOT      UG/L                        1
32216 CHLRPHYL    TOTAL      UG/L                     8.00
70507  PHOS-T     ORTHO     MG/L P                   0.000
71900 MERCURY    HG,TOTAL    UG/L                      0.0
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MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW AT BIG BEND, SD (LAT 44 02 13 LONG 99 26 18)

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      INITIAL DATE                          81/10/06
      INITIAL TIME-DEPTH-BOTTOM             1730 0000
00010  WATER      TEMP       CENT           16.1
00011  WATER      TEMP       FAHN           61.0
00020  AIR        TEMP       CENT           16.1
00025 BAROMTRC  PRESSURE   MM OF HG          741
00032  CLOUD      COVER    PERCENT            10
00035  WIND     VELOCITY     MPH            10.0
00036  WIND     DIR,FROM   NORTH=0            45
00076  TURB     TRBIDMTR   HACH FTU          5.0
00094 CNDUCTVY  FIELD      MICROMHO          806
00299   DO        PROBE      MG/L            8.1
00301   DO        SATUR    PERCENT          81.0
00400   PH                   SU             8.30
00410  T ALK      CACO3      MG/L            165
00515 RESIDUE   DISS-105   C MG/L            564
00530 RESIDUE   TOT NFLT     MG/L              1
00610 NH3+NH4-  N TOTAL      MG/L          0.000
00619 UN-IONZD   NH3-NH3     MG/L          0.000
00620  NO3-N      TOTAL      MG/L          0.000
00625 TOT KJEL      N        MG/L          0.160
00665 PHOS-TOT              MG/L P         0.010
00900 TOT HARD    CACO3      MG/L            264
00916 CALCIUM    CA-TOT      MG/L           62.0
00927 MGNSIUM    MG,TOT      MG/L           27.0
00940 CHLORIDE    TOTAL      MG/L             11
00945 SULFATE    SO4-TOT     MG/L            240
39330 ALDRIN               TOT UG/L        0.000
39350 CHLRDANE  TECH&MET   TOT UG/L        0.000
39365   DDE     WHL SMPL     UG/L          0.000
39370   DDT     WHL SMPL     UG/L          0.000
70507  PHOS-T     ORTHO     MG/L P         0.000
71900 MERCURY   HG,TOTAL     UG/L            0.0
81283  BHC        TOT        UG/L          0.000
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LAKE FRANCIS CASE NEAR ELM CREEK, SD (LAT 43 33 38 LONG 99 19 20)

```
      INITIAL DATE                          81/10/15  81/10/15  81/10/15  81/10/15  81/10/15  81/10/15  81/10/15
      INITIAL TIME-DEPTH-BOTTOM             1130 0000 1130 0001 1130 0003 1130 0009 1130 0016 1130 0021 1130 0005
      FINAL DATE                                                                                        81/10/15
      FINAL TIME-NUMBER OF SAMPLES                                                                      1150 G
      CP-SPACE OR TIME-STATISTICAL FUNC                                                                 CP-S
00010  WATER      TEMP       CENT           12.3      12.2      12.2      12.1      12.0      12.0
00011  WATER      TEMP       FAHN           54.1      54.0      54.0      53.8      53.6      53.6
00020  AIR        TEMP       CENT           14.0
00025 BAROMTRC  PRESSURE   MM OF HG          739
00032  CLOUD      COVER    PERCENT            10
00036  WIND     DIR,FROM   NORTH=0           225
00076  TURB     TRBIDMTR   HACH FTU                                                                       6.0
00077  TRANSP    SECCHI     INCHES            48
00094 CNDUCTVY  FIELD      MICROMHO          814       814       811       810       812       812
00299   DO        PROBE      MG/L            6.9       7.0       7.2       7.2       7.3       7.3
00301   DO        SATUR    PERCENT          63.9      64.8      66.7      66.7      67.6      67.6
00400   PH                   SU             8.20      8.20      8.30      8.30      8.30      8.30
00410  T ALK      CACO3      MG/L                                                                         166
00515 RESIDUE   DISS-105   C MG/L                                                                         602
00530 RESIDUE   TOT NFLT     MG/L                                                                           9
00610 NH3+NH4-  N TOTAL      MG/L                                                                       0.010
00619 UN-IONZD   NH3-NH3     MG/L                                                                       0.000
00620  NO3-N      TOTAL      MG/L                                                                       0.010
00665 PHOS-TOT              MG/L P                                                                      0.010
00900 TOT HARD    CACO3      MG/L                                                                         259
00916 CALCIUM    CA-TOT      MG/L                                                                        60.0
00927 MGNSIUM    MG,TOT      MG/L                                                                        27.0
00940 CHLORIDE    TOTAL      MG/L                                                                          11
00945 SULFATE    SO4-TOT     MG/L                                                                         236
32216 CHLRPHYL    TOTAL      UG/L                                                                       26.00
39330 ALDRIN               TOT UG/L                                                                     0.000
39350 CHLRDANE  TECH&MET   TOT UG/L                                                                     0.000
39365   DDE     WHL SMPL     UG/L                                                                       0.000
39370   DDT     WHL SMPL     UG/L                                                                       0.000
70507  PHOS-T     ORTHO     MG/L P                                                                      0.000
71900 MERCURY   HG,TOTAL     UG/L                                                                         0.4
81283  BHC        TOT        UG/L                                                                       0.000
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The following water-quality data is for lagoons at Eros Data Center. The water samples were collected by USGS personnel and analyzed by the USGS laboratory in Denver, Colorado.

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
				MINNEHAHA					
434415096371501 LAGOON #1 AT EROS DATA C		79-08-01	1300	--	--	--	--	--	--
		80-10-01	1435	--	1220	7.4	23.5	193	64
		82-06-02	1030	--	4000	8.6	16.5	351	75
434415096371502 LAGOON #2 AT EROS DATA C		79-08-01	1400	--	--	--	--	--	--
		80-10-01	1400	--	3300	8.8	15.5	396	95
		82-06-02	1330	--	4300	8.2	10.0	340	78
434415096371503 LAGOON #3 AT EROS DATA C		79-08-01	1500	--	--	--	--	--	--
		80-10-01	1145	--	3290	8.9	14.5	415	110
		82-06-02	--	--	3660	7.3	17.0	327	90
434415096371504 LAGOON #4 AT EROS DATA C		79-08-01	1600	--	--	--	--	--	--
		82-06-02	1415	--	3900	7.4	19.5	355	100

STATION NUMBER	DATE OF SAMPLE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)
					MINNEHAHA						
434415096371501	79-08-01	--	--	--	--	--	--	480	--	--	--
	80-10-01	28	100	41	2.7	28	380	48	1.3	8.8	.050
	82-06-02	42	630	77	15	43	520	900	1.0	12	.170
434415096371502	79-08-01	--	--	--	--	--	--	520	--	--	--
	80-10-01	43	470	69	10	35	530	830	1.3	.80	.040
	82-06-02	42	600	76	14	43	530	880	1.3	13	.190
434415096371503	79-08-01	--	--	--	--	--	--	560	--	--	--
	80-10-01	49	470	66	9.7	44	530	720	1.4	2.7	.180
	82-06-02	43	500	70	11	47	500	700	1.2	8.5	.140
434415096371504	79-08-01	--	--	--	--	--	--	470	--	--	--
	82-06-02	50	490	67	10	53	510	700	1.2	13	.300

STATION NUMBER	DATE OF SAMPLE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
					MINNEHAHA						
434415096371501	79-08-01	--	--	--	3.5	3.50	7.0	--	1.40	1.7	3.3
	80-10-01	12	720	.97	.60	.020	.62	.60	1.30	1.6	31
	82-06-02	12	2290	3.0	--	--	--	11	--	--	--
434415096371502	79-08-01	--	--	--	1.1	.550	1.6	--	1.10	1.3	4.0
	80-10-01	15	1660	2.5	5.4	.580	6.0	5.2	2.40	3.5	29
	82-06-02	14	2220	3.0	--	--	--	5.3	--	--	--
434415096371503	79-08-01	--	--	--	.03	.570	.60	--	.240	.29	2.1
	80-10-01	.6	1970	2.7	.42	.070	.49	.11	.190	.23	3.2
	82-06-02	11	1950	2.6	--	--	--	.49	--	--	--
434415096371504	79-08-01	--	--	--	.01	.160	.17	--	.080	.10	2.0
	82-06-02	11	1990	2.7	--	--	--	.25	--	--	--

STATION NUMBER	DATE OF SAMPLE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHATE, TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	IRON, DISSOLVED (UG/L AS FE) (01046)
					MINNEHAHA						
434415096371501	79-08-01	4.70	12	52	2.70	5.50	8.3	--	--	--	650
	80-10-01	32.0	33	144	6.00	--	18	20	1200	100	2200
	82-06-02	--	--	--	--	--	--	60	2200	40	1400
434415096371502	79-08-01	5.10	6.7	30	2.20	4.30	6.7	--	--	--	190
	80-10-01	32.0	38	168	4.10	--	13	20	1000	70	680
	82-06-02	--	--	--	--	--	--	50	2300	30	440
434415096371503	79-08-01	2.30	2.9	13	1.40	3.10	4.3	--	--	--	60
	80-10-01	3.40	3.9	17	2.80	--	8.6	20	1600	50	90
	82-06-02	--	--	--	--	--	--	30	2300	20	140
434415096371504	79-08-01	2.10	2.3	10	1.20	3.10	3.7	--	--	--	40
	82-06-02	--	--	--	--	--	--	30	2500	20	40

STATION NUMBER	DATE OF SAMPLE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)
			MINNEHAHA				
434415096371501	79-08-01	160	--	2	90	--	.10
	80-10-01	--	.6	7	4	110	2.8
	82-06-02	--	1.4	1	90	--	.33
434415096371502	79-08-01	100	--	ND	50	16	.06
	80-10-01	--	.1	8	80	27	.04
	82-06-02	--	.2	2	70	--	.16
434415096371503	79-08-01	260	--	ND	30	14	.02
	80-10-01	--	.1	1	40	22	.01
	82-06-02	--	.1	<1	190	--	.03
434415096371504	79-08-01	50	--	ND	30	--	.01
	82-06-02	--	.1	2	30	--	.02

< Less than.
ND Not detected.

The ground-water observation well network in South Dakota is used to monitor quantitative and at times qualitative changes in the glacial and bedrock aquifers. Federal, state, and local agencies monitor approximately 2,000 wells throughout the state. The eight wells included in this report are a sample of the South Dakota observation well network. All measurements are in feet above or below land-surface datum. Well 442112098174001 and well 453312098244401 tap glacial aquifers and are monitored with digital recorders. The other six wells are bedrock wells. Of these, wells 432015103535801 and 441055101121001 are measured annually with a steel tape, well 443515103513901 is monitored by a pressure recorder, and wells 435039098263403, 431619096460202, and 454745097450401 are monitored with digital recorders.

AURORA COUNTY

435039098263403.
LOCATION.--Lat 43°50'39", long 98°26'34", in SW¼SW¼SW¼NW¼ sec.6, T.104 N., R.63 W., Hydrologic Unit 10160011, 8.5 mi (13.8 km) north-northeast of Plankinton.
Owner: South Dakota Department of Water and Natural Resources.
AQUIFER.--Niobrara.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in (0.15 m), depth 134 ft (40.8 m), perforated 114 to 134 ft (34.7 to 40.8 m).
DATUM.--Land-surface datum is 1,418 ft (432.2 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 2.0 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--April 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 56.98 ft (17.098 m) below land-surface datum, Apr. 4, 1979, lowest, 96.44 ft (29.395 m) below land-surface datum, July 25, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	61.04	60.33	59.66	59.11	---	---	58.02	59.10	57.39		---	57.73
10	60.90	60.27	59.60	59.29	---	---	57.88	58.33	---		---	57.86
15	60.80	60.12	59.44	---	58.56	---	57.72	57.94	---		---	57.70
20	60.63	60.12	59.30	58.92	58.53	58.03	57.89	57.92	---		57.93	57.51
25	60.45	59.87	59.24	---	58.64	58.10	57.78	57.75	---		58.04	57.41
EOM	60.45	59.80	59.18	---	---	58.01	59.28	57.44	---		58.11	57.36
MAX	61.20	60.45	59.70	59.29	58.64	58.24	59.28	60.14	57.46		58.62	58.29
MIN	60.34	59.80	59.17	58.81	58.52	57.90	57.72	57.44	57.34		57.46	57.19

WTR YR 1982 HIGH 57.19 SEP 28 LOW 61.20 OCT 1 AND OTHERS

BEADLE COUNTY

442112098174001.
LOCATION.--Lat 44°21'12", long 98°17'40", in SW¼SW¼SW¼NW¼ sec.9, T.110 N., R.62 W., Hydrologic Unit 10160006, at southwest corner of city well field, 3.5 mi (5.6 km) west of Huron.
Owner: City of Huron.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Drilled unused public supply artesian well, diameter 12 in (0.305 m), depth 74 ft (22.6 m), perforated 38 to 74 ft (11.6 to 22.6 m).
DATUM.--Land-surface datum is 1,306.93 ft (398.352 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of platform 2.00 ft (0.610 m) above land-surface datum.
PERIOD OF RECORD.--February 1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.81 ft (3.295 m) below land-surface datum, Feb. 5, 1954, lowest, 50.23 ft (15.106 m) below land-surface datum, Dec. 5, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05, 1981	42.42	DEC 05, 1981	50.23	APR 05, 1982	40.14	AUG 05, 1982	41.43
25	41.51	25	41.17	25	39.55	25	42.96
31	39.72	JAN 20, 1982	40.55	JUN 10	38.94	SEP 05	43.01
NOV 05	49.37	31	40.39	30	40.45	30	41.07
20	50.09	MAR 20	46.18	JUL 05	41.13		
30	38.42	31	40.16	20	42.29		

BROWN COUNTY

453312098244401.
LOCATION.--Lat 45°33'12", long 98°24'44", in NW¼NW¼NW¼SW¼ sec.15, T.124 N., R.63 W., Hydrologic Unit 10160004, 1.5 mi (2.4 km) south of Ordway.
Owner: Bureau of Reclamation.
AQUIFER.--Elm.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.10 m), depth 38 ft (11.6 m), perforated 6 to 38 ft (1.8 to 11.6 m).
DATUM.--Land-surface datum is 1,304.14 ft (397.502 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 3.10 ft (0.945 m) above land-surface datum.
PERIOD OF RECORD.--August 1955 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.35 ft (0.107 m) below land-surface datum, Apr. 15, 1969, lowest, 10.87 ft (3.313 m) below land-surface datum, Mar. 15, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.68	9.26	9.04	---	---	8.85	1.37	5.64	6.64	7.57	8.26	8.64
10	9.60	9.21	9.01	---	---	8.84	2.30	6.04	6.80	7.78	8.32	8.74
15	9.57	9.14	8.98	---	---	8.70	3.01	6.21	6.90	7.94	8.37	8.86
20	9.52	9.12	---	---	---	8.42	3.99	5.90	7.00	8.10	8.43	8.94
25	9.45	9.08	---	---	8.88	8.44	4.71	6.16	7.17	8.13	8.49	8.99
EOM	9.35	9.05	---	---	8.85	7.69	5.19	6.45	7.39	8.18	8.56	9.01
MAX	9.71	9.35	9.04	8.92	8.88	8.85	7.16	6.45	7.39	8.18	8.56	9.01
MIN	9.35	9.05	8.98	8.92	8.85	7.69	1.23	5.27	6.49	7.80	8.19	8.59

WTR YR 1982 HIGH 1.23 APR 4 LOW 9.71 OCT 1 AND OTHERS

NOTE: Instantaneous observations are the maximum depths below land surface.

FALL RIVER COUNTY

432015103535801.
LOCATION.--Lat 43°20'15", long 103°53'58", in SW¼SW¼NE¼SE¼ sec.20, T.8 S., R.2 E., Hydrologic Unit 10120106, 5 mi (8 km) northwest of Edgemont.
Owner: D. Heldman.
AQUIFER.--Lakota.
WELL CHARACTERISTICS.--Drilled artesian stock well, diameter 5 in (0.13 m), depth 410 ft (124.9 m).
DATUM.--Land-surface datum is 3,532 ft (1,076.6 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 0.60 ft (0.183 m) above land-surface datum.
PERIOD OF RECORD.--September 1956 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 23.29 ft (7.099 m) below land-surface datum, Mar. 1, 1957, lowest, 38.62 ft (11.771 m) below land-surface datum, June 16, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

MAY 27, 1982 37.74.

HAAKON COUNTY

441055101121001.
LOCATION.--Lat 44°10'55", long 101°12'10", in SW¼SW¼NW¼ sec.35, T.3 N., R.24 E., Hydrologic Unit 10140102, 9.5 mi (15.3 km) north-northeast of Midland.
Owner: William Blucher.
AQUIFER.--Dakota.
WELL CHARACTERISTICS.--Drilled artesian stock well, diameter 3 in (0.08 m), depth 2,054 ft (626.1 m).
DATUM.--Land-surface datum is 2,150 ft (655.3 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 2.5 ft (0.76 m) above land-surface datum.
PERIOD OF RECORD.--August 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 149.50 ft (45.568 m) below land-surface datum, Aug. 28, 1963, lowest, 193.37 ft (58.941 m) below land-surface datum, Aug. 16, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

AUG 16, 1982 193.37.

LAWRENCE COUNTY

443515103513901.
LOCATION.--Lat 44°35'15", long 103°51'39", in SE¼NE¼NW¼ sec.10, T.7 N., R.2 E., Hydrologic Unit 10120203, 4.5 mi (7.2 km) north of Spearfish.
Owner: South Dakota Department of Water and Natural Resources.
AQUIFER.--Minnelusa.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 5 in (0.13 m), depth 1,306 ft (398.1 m), perforated 1,226 to 1,306 ft (385.9 to 398.1 m).
DATUM.--Land-surface datum is 3,205 ft (976.9 m) National Geodetic Vertical Datum of 1929. Measuring point: Base of gage 2.5 ft (0.76 m) above land-surface datum.
PERIOD OF RECORD.--April 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 302.80 ft (92.293 m) above land-surface datum, Apr. 30, 1977, lowest, 258.40 ft (78.760 m) above land-surface datum, Aug. 10, 1977.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05, 1981	264.30	JAN 05, 1982	272.20	APR 05, 1982	276.80	JUL 05, 1982	285.50
10	266.70	10	272.20	10	276.30	10	285.50
15	265.50	15	272.20	15	276.80	15	285.50
20	270.10	20	272.20	20	276.80	20	280.30
25	279.30	25	273.40	25	279.10	25	280.30
31	272.40	31	272.20	30	276.84	31	272.20
NOV 05	272.40	FEB 05	272.20	MAY 05	278.00	AUG 05	272.20
10	274.70	10	272.20	10	278.00	10	274.50
15	274.70	15	276.30	15	278.60	15	272.20
20	274.70	20	276.80	20	276.80	20	272.20
25	274.70	25	274.00	25	281.50	25	268.80
30	274.70	28	276.80	31	280.30	31	267.60
DEC 05	277.00	MAR 05	275.70	JUN 05	283.80	SEP 05	267.60
10	275.30	10	276.00	10	281.50	10	267.60
15	275.90	15	276.80	15	281.50	15	270.50
20	278.80	20	276.80	20	282.60	20	273.40
25	277.00	25	275.70	25	282.60	25	277.40
31	274.70	31	276.80	30	285.50	30	276.80

NOTE: Instantaneous observations are minimum height above land surface.

CORRECTION: Water-level measurements shown in SD-81-1 were incorrectly reported as maximum height above land surface instead of minimum height above land surface.

LINCOLN COUNTY

431619096460202.
LOCATION.--Lat 43°16'19", long 96°46'02", in NE¼NE¼NE¼NE¼ sec.32, T.98 N., R.50 W., Hydrologic Unit 10170102, 4 mi (6 km) south of Worthing.
Owner: South Dakota Department of Water and Natural Resources.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in (0.15 m), depth 383 ft (116.7 m), screened 363 to 383 ft (110.6 to 116.7 m).
DATUM.--Land-surface datum is 1,320 ft (402.3 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 3.0 ft (0.91 m) above land-surface datum.
PERIOD OF RECORD.--August 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 150.70 ft (45.933 m) below land-surface datum, Oct. 31, 1979, lowest, 153.92 ft (46.916 m) below land-surface datum, Sept. 30, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	152.78	152.87	153.01	152.94	153.12	153.13	153.24	153.22	153.12	153.29	153.69	153.77
10	152.80	152.91	153.05	153.26	152.98	153.05	153.12	153.17	153.19	153.33	153.77	153.64
15	152.84	152.79	152.92	---	152.96	153.06	152.97	153.15	153.14	153.38	153.78	153.90
20	152.84	152.96	152.87	153.06	152.99	153.06	153.28	153.19	153.21	153.46	153.90	153.86
25	152.75	152.90	152.93	153.06	153.27	153.22	153.16	153.22	153.29	153.52	153.78	153.86
EOM	152.93	152.93	152.95	153.09	153.10	153.15	153.24	153.12	153.36	153.63	153.74	153.92
MAX	152.93	153.03	153.07	153.99	153.27	153.24	153.31	153.28	153.36	153.63	153.90	153.92
MIN	152.68	152.78	152.73	152.88	152.95	152.95	152.95	153.07	153.07	153.29	153.59	153.64

WTR YR 1982 HIGH 152.68 OCT 3 AND OTHERS LOW 153.99 JAN 27

NOTE: Instantaneous observations are the maximum depths below land surface.

MARSHALL COUNTY

454745097450401.
LOCATION.--Lat 45°47'45", long 97°45'04", in SE¼NE¼SE¼ sec.23, T.127 N., R.58 W., Hydrologic Unit 09020105, within city limits of Britton.
Owner: City of Britton.
AQUIFER.--Dakota Sandstone.
WELL CHARACTERISTICS.--Drilled unused public supply artesian well, diameter 8 in (0.20 m), depth 1,060 ft (323.1 m).
DATUM.--Land-surface datum is 1,360 ft (414.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 2.50 ft (0.760 m) above land-surface datum.
PERIOD OF RECORD.--July 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 37.18 ft (11.306 m) below land-surface datum, lowest, 59.92 ft (18.221 m) below land-surface datum.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	43.92	43.74	43.64	43.73		---	43.98	44.00	43.92	44.40	44.96	44.47
10	43.86	43.74	43.70	44.09		---	43.94	43.94	43.91	44.40	44.70	44.40
15	43.81	43.65	43.68	---		---	43.80	43.90	43.95	44.39	44.75	44.38
20	43.78	43.74	43.52	---		---	44.03	43.99	43.89	44.55	44.90	44.27
25	43.71	43.57	43.67	---		44.08	44.01	44.01	44.19	44.68	44.80	44.11
EOM	43.87	43.55	43.72	---		43.91	44.01	43.90	44.27	44.50	44.54	44.12
MAX	43.99	43.88	43.79	44.09		44.12	44.08	44.11	44.27	44.69	44.96	44.51
MIN	43.63	43.55	43.44	43.68		43.69	43.65	43.88	43.83	44.32	44.47	43.87

WTR YR 1982 HIGH 43.44 DEC 2 LOW 44.98 AUG 4

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)
				BROOKINGS					
441145096472801	109N50W35DDCC	82-08-31	1210	--	75.0	1850	7.2	14.0	1054
				CUSTER					
434830103134301	3S 7E1CAAD	82-09-08	--	217FLRV	60.0	719	7.4	11.0	365
434832103161701	3S 7E10BAD	82-08-31	--	317MNLS	605	263	7.3	14.2	133
434908103145201	3S 7E2ACC	82-09-08	--	221SNDC	300	911	7.1	13.2	477
434554103121701	3S 8E19CDAC	82-09-03	--	123WRVR	100	410	7.6	15.0	159
434556103123801	3S 8E30BAAC	82-09-02	--	123WRVR	125	458	7.0	12.3	180
434600103123501	3S 8E30BAAC	82-09-02	--	123WRVR	125	444	7.1	11.0	150
434803103103501	3S 8E9CBC	82-09-02	--	217FLRV	905	667	6.5	16.5	274
434111103183801	4S 7E20CAA	82-09-01	--	221SNDC	220	2265	6.5	12.4	1152
433720103192301	5S 7E18AABB	82-09-01	--	217LKOT	303	532	7.3	12.3	215
433858103202001	5S 7E6ACAA	82-09-07	--	221SNDC	500	700	7.3	14.3	287
433055103202801	6S 7E19BCC	82-09-07	--	217INKR	140	2200	7.4	12.1	1208
				HUGHES					
442152100221101	110N79W 5ABCC	81-10-02	1030	112MSSN	--	1290	7.3	11.9	302
				LAKE					
440000097052501	106N52W 8DAAA	82-08-31	0955	--	50.0	1850	7.5	13.0	941
				MEADE					
440832103160901	2N 7E10CCBB	82-08-25	--	317MNLS	1050	472	7.6	14.8	232
441345103210701	3N 6E12CCCB	82-08-26	--	217LKOT	143	1150	7.1	11.0	626
441820103205801	4N 6E13BBB	82-09-09	--	217LKOT	795	680	7.7	17.0	92
441839103204901	4N 6E14BDA	82-08-25	--	217INKR	364	462	7.3	11.4	193
441812103230501	4N 6E16DCB	82-08-26	--	317MNLS	1460	382	7.7	13.4	194
441834103232501	4N 6E25ACAD	82-08-30	--	217INKR	360	737	7.2	10.8	328
442027103235501	4N 6E4ABD	82-08-26	--	217INKR	370	740	7.0	10.4	390
442435103320301	5N 5E8ACDDB	82-08-30	--	317MNLS	515	618	7.2	11.4	323
442708103311401	6N 5E28ADAA	82-08-30	--	217LKOT	385	1035	7.2	11.1	577
				MINNEHAHA					
434508096372701	103N48W 5CACA	82-06-03	1300	400SDUX	--	960	7.0	10.0	473
434432096364201	103N48W 8ADA	82-06-03	1120	112PLSC	--	2100	7.2	9.0	1467
434400096362201	103N48W 9CCDA	82-06-03	1000	400SDUX	--	2400	7.3	7.3	1110
434332096371500	103N48W17ACCC	81-10-06	1200	--	--	768	7.2	9.0	365
434339096381100	103N48W18ACA	81-10-06	1450	--	--	1645	7.4	9.0	911
434508096372700	103N48W5CACA	81-10-07	1230	--	--	841	7.1	9.0	527
434414096380300	103N48W7DAC	81-10-07	1615	--	--	1257	7.4	14.0	596
434432096364200	103N48W8ADA	81-10-07	1115	--	--	1408	7.3	12.5	808
434400096362200	103N48W9CCDA	81-10-07	0950	--	--	1710	6.7	9.0	770
				MOODY					
435607096461501	105N50W 1BBBA	82-09-01	1100	--	315	1900	7.5	11.0	1118
440642096314001	107N48W 1AAAA	82-09-21	1220	--	261	1500	8.5	10.0	--
440910096431001	108N49W21ABBB	82-08-31	--	--	18.0	890	7.7	17.5	431
				PENNINGTON					
435641103195801	1S 7E19CCAA	82-08-30	--	371DDWD	480	750	7.3	11.8	405
435309103124501	2S 8E7CDB	82-09-08	--	217NCSL	125	1290	6.5	11.0	556

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

STATION NUMBER	DATE OF SAMPLE	ALKALINITY LAB (MG/L AS CACO3) (90410)	BICARBONATE IT-FLD (MG/L AS HCO3) (99440)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
BROOKINGS											
441145096472801	82-08-31	39[illegible]	--	310	68	40	8	.6	6.5	--	770
CUSTER											
434830103134301	82-09-08	214	250	110	22	8.7	5	.2	3.3	<.5	170
434832103161701	82-08-31	132	120	35	11	6.0	9	.2	2.4	<.5	10
434908103145201	82-09-08	214	280	130	37	9.5	4	.2	3.9	1.0	260
434554103121701	82-09-03	196	240	56	4.7	19	19	.7	14	.8	24
434556103123801	82-09-02	206	230	62	6.1	18	17	.6	12	.5	34
434600103123501	82-09-02	195	230	52	4.8	26	25	1.0	13	1.1	30
434803103103501	82-09-02	221	250	75	21	38	23	1.0	7.6	<.5	140
434111103183801	82-09-01	159	180	260	110	120	18	1.6	13	<.5	1200
433720103192301	82-09-01	274	320	58	17	26	20	.8	9.1	<.5	22
433858103202001	82-09-07	214	310	61	23	51	30	1.5	8.1	<.5	99
433055103202801	82-09-07	123	160	350	81	32	5	.4	9.5	.6	730
HUGHES											
442152100221101	81-10-02	230	--	73	29	160	53	4.1	5.8	--	300
LAKE											
440000097052501	82-08-31	568	--	230	89	79	15	1.2	12	--	550
MEADE											
440832103160901	82-08-25	208	250	55	23	3.0	3	.1	2.7	<.5	31
441345103210701	82-08-26	332	390	160	55	6.3	2	.1	2.4	1.0	240
441820103205801	82-09-09	223	260	23	8.4	120	73	5.6	5.4	<.5	130
441839103204901	82-08-25	212	280	51	16	44	32	1.4	7.2	13	65
441812103230501	82-08-26	195	220	43	21	1.7	2	.1	1.5	<.5	9.0
441834103232501	82-08-30	212	250	87	27	21	12	.5	6.6	.8	180
442027103235501	82-08-26	189	220	110	28	6.4	3	.1	5.0	<.5	200
442435103320301	82-08-30	227	260	88	25	2.6	2	.1	1.7	<.5	110
442708103311401	82-08-30	212	220	170	37	6.1	2	.1	2.7	1.8	380
MINNEHAHA											
434508096372701	82-06-03	304	--	140	30	16	7	.3	3.8	--	210
434432096364201	82-06-03	862	--	340	150	63	8	.7	16	--	140
434400096362201	82-06-03	475	--	230	130	52	9	.7	10	--	140
434332096371500	81-10-06	320	--	110	22	18	0	.4	3.1	--	90
434339096381100	81-10-06	130	--	200	100	45	0	.7	5.3	--	830
434508096372700	81-10-07	280	--	150	37	17	7	.3	3.8	--	190
434414096380300	81-10-07	450	--	110	78	31	10	.6	1.3	--	84
434432096364200	81-10-07	710	--	190	81	18	5	.3	12	--	64
434400096362200	81-10-07	410	--	160	90	35	9	.6	8.6	--	130
MOODY											
435607096461501	82-09-01	261	--	250	120	140	21	1.9	15	--	1000
440642096314001	82-09-21	--	--	--	--	--	--	--	--	--	--
440910096431001	82-08-31	248	--	120	32	17	8	.4	3.5	--	200
PENNINGTON											
435641103195801	82-08-30	346	400	68	57	9.4	5	.2	5.2	<.5	88
435309103124501	82-09-08	287	360	170	32	38	13	.7	17	<.5	410

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

STATION NUMBER	DATE OF SAMPLE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	BROMIDE DISSOLVED (MG/L AS BR) (71870)	IODIDE, DISSOLVED (MG/L AS I) (71865)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)
BROOKINGS											
441145096472801	82-08-31	3.0	.3	--	--	28	1560	1430	<.10	--	--
CUSTER											
434830103134301	82-09-08	6.9	.2	--	--	16	553	467	.29	--	3
434832103161701	82-08-31	1.7	.3	--	--	15	243	162	.24	--	8
434908103145201	82-09-08	7.7	.3	--	--	16	671	594	.24	--	2
434554103121701	82-09-03	3.9	.3	--	--	14	247	254	<.10	--	3
434556103123801	82-09-02	3.8	.4	--	--	15	271	275	<.10	--	1
434600103123501	82-09-02	4.0	.3	--	--	19	267	266	<.10	--	1
434803103103501	82-09-02	3.3	.4	--	--	12	436	431	.12	--	<1
434111103183801	82-09-01	1.1	1.0	--	--	8.0	1930	1830	.11	--	2
433720103192301	82-09-01	4.0	.7	--	--	10	315	313	.44	--	3
433858103202001	82-09-07	9.5	.8	--	--	10	466	394	.54	--	5
433055103202801	82-09-07	110	.5	--	--	9.4	1760	1660	60	--	<1
HUGHES											
442152100221101	81-10-02	89	.5	.50	.010	24	--	821	.12	20	--
LAKE											
440000097052501	82-08-31	12	.5	--	--	28	1430	1340	<.10	--	--
MEADE											
440832103160901	82-08-25	1.2	.3	--	--	12	221	255	.31	--	4
441345103210701	82-08-26	13	.2	--	--	12	758	728	9.0	--	1
441820103205801	82-09-09	1.8	.4	--	--	7.7	425	431	<.10	--	<1
441839103204901	82-08-25	2.6	.3	--	--	6.9	350	320	<.10	--	1
441812103230501	82-08-26	.8	.2	--	--	9.6	314	205	.16	--	4
441834103232501	82-08-30	1.9	.4	--	--	7.8	521	461	<.10	--	<1
442027103235501	82-08-26	1.5	.4	--	--	7.4	492	473	.16	--	<1
442435103320301	82-08-30	2.4	.2	--	--	12	399	384	1.3	--	2
442708103311401	82-08-30	1.0	.4	--	--	11	793	736	.11	--	1
MINNEHAHA											
434508096372701	82-06-03	1.4	.7	.05	.000	25	--	613	.68	20	--
434432096364201	82-06-03	290	.4	1.6	.090	27	--	1790	56	20	--
434400096362201	82-06-03	180	.5	.85	.080	27	--	1470	94	20	--
434332096371500	81-10-06	2.3	1.0	.10	.010	20	--	461	.27	20	--
434339096381100	81-10-06	11	.3	.20	.040	14	--	1290	.22	10	--
434508096372700	81-10-07	1.4	.9	.10	.020	26	--	865	61	20	--
434414096380300	81-10-07	59	1.1	.50	.010	26	--	724	14	20	--
434432096364200	81-10-07	59	.6	.40	.050	28	--	924	10	10	--
434400096362200	81-10-07	120	.6	.50	.050	25	--	818	.31	10	--
MOODY											
435607096461501	82-09-01	18	.4	--	--	38	1960	1740	<.10	--	--
440642096314001	82-09-21	--	--	--	--	--	--	--	--	--	--
440910096431001	82-08-31	4.7	.3	--	--	25	698	574	5.1	--	--
PENNINGTON											
435641103195801	82-08-30	2.8	.4	--	--	7.8	528	447	.12	--	1
435309103124501	82-09-08	8.7	.8	--	--	8.6	1010	858	<.10	--	<1

< Less than.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

STATION NUMBER	DATE OF SAMPLE	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) (01516)	RADIUM 228 DIS-SOLVED (PCI/L AS RA-228) (81366)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
BROOKINGS											
441145096472801	82-08-31	--	--	--	--	--	--	--	--	--	--
CUSTER											
434830103134301	82-09-08	--	--	--	--	--	--	--	<.1	1	--
434832103161701	82-08-31	--	--	--	--	--	--	--	<.1	1	--
434908103145201	82-09-08	--	--	--	--	--	--	--	<.1	2	--
434554103121701	82-09-03	--	--	--	--	--	--	<2.0	<.1	<1	--
434556103123801	82-09-02	--	--	--	--	--	--	<3.0	<.1	<1	--
434600103123501	82-09-02	--	--	--	--	--	--	<2.0	<.1	<1	--
434803103103501	82-09-02	--	--	--	--	--	--	<3.0	<.1	3	--
434111103183601	82-09-01	--	--	--	--	--	--	--	<.1	28	--
433720103192301	82-09-01	--	--	--	--	--	--	--	<.1	4	--
433058103202001	82-09-07	--	--	--	--	--	--	--	<.1	51	--
433055103202801	82-09-07	--	--	--	--	--	--	--	<.1	7	--
HUGHES											
442152100221101	81-10-02	200	0	120	.0	--	--	--	--	--	0
LAKE											
440000097052501	82-08-31	--	--	--	--	--	--	--	--	--	--
MEADE											
440832103160901	82-08-25	--	--	--	--	--	--	--	<.1	8	--
441345103210701	82-08-26	--	--	--	--	--	--	--	<.1	5	--
441820103205801	82-09-09	--	--	--	--	--	--	<3.0	<.1	<1	--
441839103204901	82-08-25	--	--	--	--	--	--	--	<.1	<1	--
441812103230501	82-08-26	--	--	--	--	--	--	--	<.1	4	--
441834103232501	82-08-30	--	--	--	--	--	--	--	<.1	3	--
442027103235501	82-08-26	--	--	--	--	--	--	--	<.1	23	--
442435103320301	82-08-30	--	--	--	--	--	--	--	<.1	1	--
442708103311401	82-08-30	--	--	--	--	--	--	--	<.1	3	--
MINNEHAHA											
434508096372701	82-06-03	190	<10	20	.1	--	--	--	--	--	<1
434432096364201	82-06-03	90	<10	90	.1	--	--	--	--	--	<1
434400096362201	82-06-03	20	<10	40	.1	--	--	--	--	--	<1
434332096371500	81-10-06	250	0	280	.0	--	--	--	--	--	0
434339096381100	81-10-06	540	0	6600	.0	--	--	--	--	--	0
434508096372700	81-10-07	180	0	22	.0	--	--	--	--	--	0
434414096380300	81-10-07	80	0	<10	.0	--	--	--	--	--	0
434432096364200	81-10-07	80	0	13	.1	--	--	--	--	--	0
434400096362200	81-10-07	60	0	<10	.1	--	--	--	--	--	0
MOODY											
435607096461501	82-09-01	--	--	--	--	--	200	--	--	--	--
440642096314001	82-09-21	--	--	--	--	35	--	--	--	--	--
440910096431001	82-08-31	--	--	--	--	--	--	--	--	--	--
PENNINGTON											
435641103195801	82-08-30	--	--	--	--	--	--	--	<.1	<1	--
435309103124501	82-09-08	--	--	--	--	--	--	<3.0	<.1	1	--

< Less than.

STATION NUMBER	DATE OF SAMPLE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	URANIUM DIS-SOLVED, EXTRACTION (UG/L) (80020)
BROOKINGS											
441145096472801	82-08-31	--	--	--	--	--	--	--	--	--	--
CUSTER											
434830103134301	82-09-08	--	<16	--	<6.6	--	<6.4	--	.66	4.7	--
434832103161701	82-08-31	--	8.6	--	9.1	--	4.6	--	.41	2.9	--
434904103145201	82-09-08	--	<15	--	<8.9	--	<8.5	--	.68	5.6	--
434554103121701	82-09-03	--	<6.9	--	14	--	14	--	.30	--	.12
434556103123801	82-09-02	--	<9.5	--	13	--	15	--	.20	--	.09
434600103123501	82-09-02	--	<7.2	--	11	--	11	--	.33	--	.31
434803103103501	82-09-02	--	<13	--	13	--	13	--	1.0	--	.10
434111103183801	82-09-01	--	<54	--	<29	--	<28	--	.89	19	--
433720103192301	82-09-01	--	31	--	14	--	13	--	.73	18	--
433858103202001	82-09-07	--	39	--	16	--	15	--	.56	18	--
433055103202801	82-09-07	--	270	--	24	--	23	--	.43	5.5	--
HUGHES											
442152100221101	81-10-02	5	--	--	--	--	--	--	--	--	--
LAKE											
440000097052501	82-08-31	--	--	--	--	--	--	--	--	--	--
MEADE											
440832103160901	82-08-25	--	13	--	9.8	--	8.6	--	.34	3.7	--
441345103210701	82-08-26	--	<19	--	<9.2	--	<8.8	--	.25	3.1	--
441820103205801	82-09-09	--	29	--	8.2	--	7.8	--	1.2	--	3.2
441839103204901	82-08-25	--	18	--	11	--	11	--	1.2	11	--
441812103230501	82-08-26	--	10	--	5.3	--	5.2	--	1.2	10	--
441834103232501	82-08-30	--	25	--	14	--	13	--	1.5	8.4	--
442027103235501	82-08-26	--	<16	--	11	--	10	--	1.9	7.0	--
442435103320301	82-08-30	--	<12	--	<5.6	--	<5.4	--	.47	2.5	--
442708103311401	82-08-30	--	20	--	<9.0	--	<9.1	--	.31	12	--
MINNEHAHA											
434508096372701	82-06-03	52	--	--	--	--	--	--	--	--	--
434432096364201	82-06-03	50	--	--	--	--	--	--	--	--	--
434400096362201	82-06-03	20	--	--	--	--	--	--	--	--	--
434332096371500	81-10-06	16	--	--	--	--	--	--	--	--	--
434339096381100	81-10-06	190	--	--	--	--	--	--	--	--	--
434508096372700	81-10-07	59	--	--	--	--	--	--	--	--	--
434414096360300	81-10-07	24	--	--	--	--	--	--	--	--	--
434432096364200	81-10-07	20	--	--	--	--	--	--	--	--	--
434400096362200	81-10-07	23	--	--	--	--	--	--	--	--	--
MOODY											
435607096461501	82-09-01	--	<43	290	29	160	28	170	.35	5.7	--
440642096314001	82-09-21	--	51	<.8	<14	.8	<13	.8	.27	17	--
440910096431001	82-08-31	--	--	--	--	--	--	--	--	--	--
PENNINGTON											
435641103195801	82-08-30	--	<12	--	<7.1	--	<6.7	--	.36	2.5	--
435309103124501	82-09-08	--	<27	--	15	--	14	--	.95	2.1	--

< Less than.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

STATION NUMBER	DATE OF SAMPLE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CYANIDE TOTAL (MG/L AS CN) (00720)	CYANIDE DIS-SOLVED (MG/L AS CN) (00723)
		BROOKINGS		
441145096472801	82-08-31	--	--	--
		CUSTER		
434830103134301	82-09-08	.6	--	<.01
434832103161701	82-08-31	2.6	--	<.01
434902103145201	82-09-08	.4	--	<.01
434550103121701	82-09-03	.1	--	<.01
434556103123801	82-09-02	.8	--	<.01
434600103123501	82-09-02	.2	--	<.01
434803103103501	82-09-02	<.1	--	<.01
434111103163601	82-09-01	<.1	--	<.01
433720103192301	82-09-01	1.2	--	<.01
433858103202001	82-09-07	<.1	--	<.01
433055103202801	82-09-07	2.5	--	.03
		HUGHES		
442152100221101	81-10-02	--	--	--
		LAKE		
440000097052501	82-08-31	--	--	--
		MEADE		
440832103160901	82-08-25	<.1	--	<.01
441345103210701	82-08-26	1.2	--	<.01
441820103205801	82-09-09	<.1	--	<.01
441839103204901	82-08-25	15	--	<.01
441812103230501	82-08-26	<.1	--	<.01
441834103232501	82-08-30	.6	--	<.01
442027103235501	82-08-26	.1	--	<.01
442435103320301	82-08-30	.1	--	<.01
442708103311401	82-08-30	<.1	--	<.01
		MINNEHAHA		
434508096372701	82-06-03	--	<.01	--
434432096364201	82-06-03	--	.04	--
434400096362201	82-06-03	--	.02	--
434332096371500	81-10-06	2.1	<.01	--
434339096381100	81-10-06	--	<.01	--
434508096372700	81-10-07	--	<.01	--
434414096380300	81-10-07	--	<.01	--
434432096364200	81-10-07	--	<.01	--
434400096362200	81-10-07	--	.05	--
		MOODY		
435607096461501	82-09-01	--	--	--
440642096314001	82-09-21	--	--	--
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435309103124501	82-09-08	1.1	--	<.01

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INDEX

Page
Accuracy of field data and computed results.......... 17
Acre-ft, definition of.......... 8
Adenosine triphosphate, definition of.......... 8
Akron, IA, Big Sioux River at.......... 239-242, 277
Alexandria, Pierre Creek near.......... 183, 270
Algae, definition of.......... 8
  blue-green, definition of.......... 11
  green, definition of.......... 11
Algal growth potential, definition of.......... 8
Alpena, Sand Creek near (James River basin).......... 173, 269
Angostura Dam, Cheyenne River below.......... 47, 249
Angostura Reservoir near Hot Springs.......... 46
Aquifer, definition of.......... 8
Artesian, definition of.......... 8
Ash mass, definition of.......... 8
Ashton, James River at.......... 166-167, 268
Aurora County, ground-water levels in.......... 285

Bacteria, definition of.......... 8
Bad River, near Fort Pierre.......... 123-126
  near Midland.......... 122, 262
Battle Creek, at Hermosa (Cheyenne River tributary).......... 53, 251
  near Keystone (Cheyenne River tributary).......... 51, 251
Beadle County, ground-water levels in.......... 285
Beaver Creek, at Mallo Camp, near Four Corners, WY (tributary to Stockade Beaver Creek).......... 40
  near Buffalo Gap (tributary to Cheyenne River).......... 49, 250
  near Yankton (tributary to James River).......... 205-208, 272
Bed material, definition of.......... 8
Belle Fourche, Belle Fourche Reservoir near.......... 97
  Hay Creek at.......... 92, 259
  Inlet Canal near.......... 93-96, 259
  Redwater River above.......... 91, 259
Belle Fourche Reservoir near Belle Fourche.......... 97
Belle Fourche River, at Wyoming-South Dakota State line.......... 84-85, 257
  near Elm Springs.......... 109-111, 262
  near Fruitdale.......... 98, 260
  near Sturgis.......... 104-108, 261
Beulah, WY, Sand Creek (Cheyenne River basin) near Ranch A, near.......... 87
Big Bend, Powerhouse Outflow at.......... 282
Big Sioux River, at Akron, IA.......... 239-242, 277
  at North Cliff Avenue, at Sioux Falls.......... 237, 277
  near Brookings.......... 230, 275
  near Castlewood.......... 225, 274
  near Dell Rapids.......... 232-235, 276
  near Watertown.......... 223, 273
Biochemical oxygen demand (BOD), definition of.......... 8
Biomass, definition of.......... 8
Blunt, Medicine Knoll Creek near.......... 127
Bottom material, definition of.......... 9
Boxelder Creek, near Nemo.......... 78, 256
  near Rapid City.......... 79, 256
Brookings, Big Sioux River near.......... 230, 275
  Medary Creek near.......... 228-229, 275
Brookings County, quality of ground water in.......... 289-294
Brown County, ground-water levels in.......... 286
Buckhorn, WY, Cold Springs Creek at.......... 86
Buffalo, South Fork Grand River at.......... 28, 247
Buffalo Gap, Beaver Creek near (tributary to Cheyenne River).......... 49, 250

Camp Crook, Little Missouri River at.......... 24
Cascade Springs near Hot Springs.......... 44, 249
Cash, South Fork Grand River near.......... 29, 247

Page
Castle Creek, above Deerfield Reservoir, near Hill City.......... 57-62, 252
  below Deerfield Dam.......... 64, 253
Castlewood, Big Sioux River near.......... 225, 274
  Stray Horse Creek near.......... 226, 274
Cells per volume.......... 9
Cfs-day, definition of.......... 9
Chemical analyses of ground water.......... 289-294
Chemical oxygen demand (COD), definition of.......... 9
Cherry Creek, Cheyenne River at.......... 113-116, 262
  near Plainview.......... 112, 262
Cheyenne River, at Cherry Creek.......... 113-116, 262
  at Edgemont.......... 42, 248
  below Angostura Dam.......... 47, 249
  near Wasta.......... 80, 257
Chlorophyll, definition of.......... 9
Clayton, Wolf Creek (tributary to James River) near.......... 188-189, 271
Cold Brook Reservoir at Hot Springs.......... 380-381
Cold Springs Creek at Buckhorn, WY.......... 86
Coliform bacteria, fecal, definition of.......... 8
  fecal streptococcal, definition of.......... 8
  total, definition of.......... 8
Collection and computation of surface-water data.......... 15
Collection and examination of water-quality data.......... 18
Collection and explanation of ground-water level data.......... 19
Collection of ground-water data.......... 19
Color unit, definition of.......... 9
Columbia, James River at.......... 161-163, 267
Conductance at miscellaneous sites.......... 245-277
Contents, definition of.......... 9
Control, definition of.......... 9
Control structure, definition of.......... 9
Cooperation.......... 1
Corson, Split Rock Creek at.......... 238, 277
Crow Creek near Gann Valley.......... 131, 263
Cubic feet per square mile, definition of.......... 9
Cubic foot per second, definition of.......... 9
Custer, Grace Coolidge Creek near Game Lodge, near.......... 52, 251
Custer County, quality of ground water in.......... 289-294

Deadwood, Whitewood Creek at.......... 99, 260
Deadwood Avenue Drain at Mouth, at Rapid City.......... 71, 245
Deerfield Dam, Castle Creek below.......... 64, 253
Deerfield Reservoir near Hill City.......... 63
Definition of terms and abbreviations.......... 8-13
Dell Rapids, Big Sioux River near.......... 232-235, 276
Diatoms, definition of.......... 11
Discharge, definition of.......... 9
  mean, definition of.......... 9
  instantaneous, definition of.......... 9
Discharge at miscellaneous sites.......... 246-247
Dissolved, definition of.......... 9
Diversity index, definition of.......... 9
Downstream order and station number.......... 14
Drainage area, definition of.......... 9
Drainage basin, definition of.......... 9
Dry mass, definition of.......... 8

Edgemont, Cheyenne River at.......... 42, 248
  Hat Creek near.......... 43, 249
Elk Creek, near Elm Springs.......... 82, 257
  near Rapid City.......... 81, 257
Elm Creek, Lake Francis Case near.......... 282
Elm River at Westport.......... 165, 268
Elm Springs, Belle Fourche River near.......... 109-111, 262
  Elk Creek near.......... 82, 257
Enemy Creek near Mitchell.......... 179-182, 270

Page
Estelline, Hidewood Creek near............ 227, 275
Explanation of, surface-water records..... 15
  water-quality records.................. 18
  ground-water level records.............. 19

Fairburn, French Creek above.............. 50, 250
Faith, Moreau River near.................. 36, 248
Fall River County, ground-water levels in. 286
Fall River at Hot Springs................. 48, 250
Farmingdale, Rapid Creek near............. 77, 256
Firesteel Creek near Mount Vernon (James River basin)................. 178, 270
Flandreau Creek above Flandreau........... 231, 276
Forestburg, James River near..............174-177, 269
Fort Pierre, Bad River near............... 123-126
Fort Randall Dam, Missouri River at.......151-154, 266
Fort Thompson, Lake Sharpe near........... 129-130
Four Corners, WY, Beaver Creek at Mallo Camp, near.................... 40
French Creek above Fairburn............... 50, 250
Fruitdale, Belle Fourche River near....... 98, 260

Gage height, definition of................ 10
Gaging station, definition of............. 10
Gann Valley, Crow Creek near.............. 151, 263
Gayville, Missouri River near.............209-210, 272
Grace Coolidge Creek near Game Lodge, near Custer.......................... 52, 251
Grand River, at Shadehill................. 31, 247
  at Little Eagle......................... 32-35
Greenwood, Missouri River at.............. 155
Ground water, chemical analyses of........ 289-294
Ground-water level records................ 285-288

Haakon County, ground-water levels in..... 286
Hardness, definition of................... 10
Hat Creek near Edgemont................... 43, 249
Hawthorne Ditch at Rapid City............. 74, 245
Hay Creek at Belle Fourche................ 92, 259
Hermosa, Battle Creek at (Cheyenne River tributary)..................... 53, 251
  Spring Creek near (Cheyenne River tributary)....................... 54, 252
Herreid, Spring Creek near (Missouri River tributary).................... 25-26
Hidewood Creek near Estelline............. 227, 275
Hill City, Castle Creek above Deerfield Reservoir, near...................... 57-62, 252
  Deerfield Reservoir near................ 63
Horse Creek, above Vale................... 101, 261
  near Vale............................... 102-103
Horsehead Creek near Oelrichs............. 45
Hot Springs, Angostura Reservoir near..... 46
  Cascade Springs near.................... 44, 249
  Cold Brook Reservoir at................. 280-281
  Fall River at........................... 48, 250
Hughes County, quality of ground water in.............................. 289-294
Huron, James River at.....................169-172, 269
Hydrologic bench-mark station, definition of......................... 14
Hydrologic unit, definition of............ 10

Inlet Canal near Belle Fourche............ 93-96, 259
Instantaneous discharge, definition of.... 9
Introduction.............................. 1

James River, at Ashton....................166-167, 268
  at Columbia.............................161-163, 267
  at Huron................................169-172, 269
  near Forestburg.........................174-177, 269
  near Redfield........................... 168, 268
  near Scotland...........................194-200, 271
  near Yankton............................201-204, 272

Kadoka, White River near.................. 133, 263
Kennebec, Medicine Creek at............... 128, 263
Keya Paha River at Wewela................. 156, 267
Keyhole Reservoir near Moorcroft, WY...... 83
Keystone, Battle Creek near (Cheyenne River tributary)..................... 51, 251

Lake County, quality of ground water in... 289-294
Lake Creek below refuge, near Tuthill..... 135, 264
Lake Francis Case, at Pickstown........... 149-150
  near Elm Creek.......................... 282
Lake Oahe, near Pierre.................... 117-118
  near Pollock............................ 278
Lake Pocasse at Pollock................... 279
Lake Sharpe near Fort Thompson............ 129-130
Lakes and reservoirs:
  Angostura Reservoir near Hot Springs.... 46
  Belle Fourche Reservoir near Belle Fourche........................ 97
  Cold Brook Reservoir at Hot Springs..... 380-381
  Deerfield Reservoir near Hill City...... 63
  Francis Case, Lake, at Pickstown........ 149-150
    near Elm Creek........................ 282
  Keyhole Reservoir near Moorcroft, WY.... 83
  Lewis and Clark Lake, at Springfield.... 157
    near Yankton.......................... 158-159
  Oahe, Lake, near Pierre................. 117-118
    near Pollock.......................... 278
  Pactola Reservoir near Silver City...... 66
  Pocasse, Lake, at Pollock............... 279
  Shadehill Reservoir at Shadehill........ 30
  Sharpe, Lake, near Fort Thompson........ 129-130
Lawrence County, ground-water levels in... 287
Lewis and Clark Lake, at Springfield...... 157
  near Yankton............................ 158-159
Lime Creek at Mouth, at Rapid City........ 69, 245
Lincoln County, ground-water levels in.... 287
Little Eagle, Grand River at.............. 32-35
Little Missouri River at Camp Crook....... 24
Little Vermillion River near Salem........ 212, 272
Little White River, above Rosebud......... 137, 265
  below White River....................... 140, 266
  near Martin............................. 134, 264
  near Rosebud............................ 139, 265
  near Vetal.............................. 136, 264
Lonetree Creek at Olivet..................190-193, 271

Map showing location of, gaging stations.. 21
  surface-water quality stations.......... 22
  ground-water observation wells.......... 23
Maple River at North Dakota-South Dakota State line................... 164
Marshall County, ground-water levels in... 288
Martin, Little White River near........... 134, 264
Maskell, NE, Missouri River near.......... 211
Meade County, quality of ground water in.. 289-294
Mean concentration, definition of......... 12
Mean discharge, definition of............. 9
Medary Creek near Brookings...............228-229, 275
Medicine Creek (tributary to Missouri River) at Kennebec.................. 128, 263
Medicine Knoll Creek near Blunt........... 127
Metamorphic stage, definition of.......... 10
Methylene blue active substance (MBAS), definition of............... 10
Micrograms per gram (ug/g), definition of....................... 10
Micrograms per liter (UG/L, ug/L), definition of....................... 10
Midland, Bad River near................... 122, 262
Milligrams per liter (MG/L, mg/L), definition of....................... 10
Milligrams of carbon, definition of....... 10
Milligrams of oxygen, definition of....... 11
Milltown, Plum Creek near.................184-187, 270
Minnehaha County, quality of ground water in............................ 289-294
  quality of surface water in............. 283-284
Miscellaneous, discharge measurements..... 245-246
  field determinations.................... 247-277
  rainfall data........................... 244
  temperature measurements................ 247-277
  water quality data...................... 278-284
Missouri River, at Fort Randall Dam.......151-154, 266
  at Greenwood............................ 155
  at Pierre............................... 119-121
  at Sioux City, IA....................... 243
  at Yankton.............................. 160, 267
  near Gayville...........................209-210, 272
  near Maskell, NE........................ 211
  near Ponca, NE.......................... 215-222
Mitchell, Enemy Creek near................179-182, 270
Moody County, quality of ground water in............................ 289-294
Moorcroft, WY, Keyhole Reservoir near..... 83
Moreau River, near Faith.................. 36, 248
  near Whitehorse......................... 37-39, 248
Mount Vernon, Firesteel Creek near (James River basin)................. 178, 270
Murray Ditch at Wyoming-South Dakota State line......................... 88, 258

Page
National Geodetic Vertical Datum, definition of.......... 10
National stream-quality accounting network.......... 15
Nemo, Boxelder Creek near.......... 78, 256
Newcastle, WY, Stockade Beaver Creek near.......... 41
North Dakota-South Dakota State line, Maple River at.......... 164
North Fork Grand River near White Butte... 27
Numbering system for wells and miscellaneous sites.......... 14

Oacoma, White River near..........141-148, 266
Oelrichs, Horsehead Creek near.......... 45
Oglala, White River near.......... 132, 263
Olivet, Lonetree Creek at..........190-193, 271
Organic mass, definition of.......... 9
Organism, definition of.......... 10
count per area, definition of.......... 10
count per volume, definition of.......... 10
count, total, definition of.......... 10
Other data available.......... 17

Pactola Dam, Rapid Creek below.......... 67, 253
Pactola Reservoir near Silver City.......... 66
Parameter codes, definition of.......... 10
Parker, West Fork Vermillion River near... 213, 273
Partial-record station, definition of..... 10
Particle size, definition of.......... 10
classification, definition of.......... 10
Pennington County, quality of ground water in.......... 289-294
Percent composition, definition of.......... 11
Pesticide program, definition of.......... 15
Pesticides, definition of.......... 11
Phytoplankton, definition of.......... 11
Pickstown, Lake Francis Case at.......... 149-150
Picocurie, definition of.......... 11
Pierre Creek near Alexandria.......... 183, 270
Pierre, Missouri River at.......... 119-121
Lake Oahe near.......... 117-118
Plainview, Cherry Creek near.......... 112, 262
Plankton, definition of.......... 11
Plum Creek near Milltown..........184-187, 270
Pollock, Lake Oahe near.......... 278
Lake Pocasse at.......... 279
Polychlorinated biphenyls, definition of.......... 11
Ponca, NE, Missouri River near.......... 215-222
Powerhouse Outflow at Big Bend.......... 282
Primary productivity, definition of.......... 11
Publications.......... 20

Radiochemical program, definition of...... 15
Rapid City, Boxelder Creek near.......... 79, 256
Deadwood Avenue Drain at Mouth, at...... 71, 245
Elk Creek near.......... 81, 257
Hawthorne Ditch at.......... 74, 245
Lime Creek at Mouth, at.......... 69, 245
Rapid Creek above Canyon Lake, near..... 68, 254
Rapid Creek above Water Treatment Plant, at.......... 70
Rapid Creek at.......... 72, 255
Rapid Creek at East Main Street, at..... 73
Rapid Creek below Hawthorne Ditch, at... 75
Rapid Creek below Sewage Plant, near.... 76, 256
Rapid Creek, above Canyon Lake, near Rapid City.......... 68, 254
above Pactola Reservoir, at Silver City.......... 65, 253
above Water Treatment Plant, at Rapid City.......... 70
at East Main Street, at Rapid City...... 73
at Rapid City.......... 72, 255
below Hawthorne Ditch, at Rapid City.... 75
below Pactola Dam.......... 67, 253
below Sewage Plant, near Rapid City..... 76, 256
near Farmingdale.......... 77, 256
Records of discharge by other agencies.... 17
Records, ground-water level.......... 346-348
Redfield, James River near.......... 168, 268
Redwater Creek at Wyoming-South Dakota State line.......... 89, 258
Redwater River above Belle Fourche........ 91, 259
References, selected.......... 20
Reservoirs, See Lakes and reservoirs......
Rhoads Fork near Rochford.......... 55-56, 252

Page
Rosebud Creek at Rosebud.......... 138, 265
Rosebud, Little White River above......... 137, 265
Little White River near.......... 139, 265
Runoff, in inches, definition of.......... 11

Salem, Little Vermillion River near....... 212, 272
Sand Creek (James River basin) near Alpena.......... 173, 269
Sand Creek (Cheyenne River basin) near Ranch A, near Beulah, WY.......... 87
Scotland, James River near..........194-200, 271
Sediment.......... 18
Sediment, definition of.......... 12
Shadehill, Grand River at.......... 31, 247
Shadehill Reservoir at Shadehill.......... 30
Silver City, Rapid Creek above Pactola Reservoir, at.......... 65, 253
Pactola Reservoir near.......... 66
Sioux City, IA, Missouri River at.......... 243
Sioux Falls, Skunk Creek at.......... 236, 276
Big Sioux River at North Cliff Avenue, at.......... 237, 277
Skunk Creek at Sioux Falls.......... 236, 276
Solute, definition of.......... 12
South Fork Grand River, at Buffalo........ 28, 247
near Cash.......... 29, 247
Spearfish Creek at Spearfish.......... 90, 258
Special networks and programs.......... 14
Specific conductance, at miscellaneous sites.......... 245-277
definition of.......... 12
Split Rock Creek at Corson.......... 238, 277
Spring Creek (tributary to Cheyenne River) near Hermosa.......... 54, 252
Spring Creek (tributary to Missouri River) near Herreid.......... 25-26
Springfield, Lewis and Clark Lake at...... 157
Stage-discharge relation, definition of... 12
Stockade Beaver Creek near Newcastle, WY.. 41
Stray Horse Creek near Castlewood......... 226, 274
Streamflow, definition of.......... 12
Sturgis, Belle Fourche River near..........104-108, 261
Substrate, definition of.......... 12
Artificial, definition of.......... 12
Natural, definition of.......... 12
Summary of hydrologic conditions.......... 2-7
Surface area, definition of.......... 12
Surficial bed material, definition of..... 12
Suspended sediment, definition of.......... 12
concentration, definition of.......... 12
discharge, definition of.......... 12
load, definition of.......... 12
Suspended recoverable, definition of...... 12
Suspended total, definition of.......... 13

Taxonomy, definition of.......... 13
Temperature at miscellaneous sites........ 247-277
Terms and abbreviations, definition of.... 8-14
Time-weighted average, definition of...... 13
Tons per acre-foot, definition of.......... 13
Tons per day, definition of.......... 13
Total in bottom material, definition of... 13
Total load, definition of.......... 13
Total recoverable, definition of.......... 13
Total sediment discharge, definition of... 12
Tritium network, definition of.......... 15
Turbidity, definition of.......... 13
Tuthill, Lake Creek below refuge, near.... 135, 264

Vale, Horse Creek above.......... 101
Horse Creek near.......... 102-103
Vermillion River near Wakonda.......... 214, 273
Vetal, Little White River near.......... 136, 264

Wakonda, Vermillion River near.......... 214, 273
Wasta, Cheyenne River near.......... 80, 257
Water analysis, ground water.......... 289-294
Water temperature.......... 18
Water-supply papers, definition of........ 1
Watertown, Big Sioux River near.......... 223, 273
Willow Creek near.......... 224, 274
Weighted average, definition of.......... 13
Well-numbering system.......... 14
West Fork Vermillion River near Parker.......... 213, 273
Westport, Elm River at.......... 165, 268
Wet mass, definition of.......... 9
Wewela, Keya Paha River at.......... 156, 267

Page
White Butte, North Fork Grand River near.. 27
White River, Little White River below..... 140, 266
  near Oglala........................... 132, 263
  near Kadoka........................... 133, 263
  near Oacoma...........................141-148, 266
Whitehorse, Moreau River near............. 37-39, 248
Whitewood Creek, at Deadwood.............. 99, 260
  near Whitewood........................ 100, 260
Willow Creek near Watertown............... 224, 274
Wolf Creek (tributary to James River)
    near Clayton........................188-189, 271
WRD, definition of........................ 14

Page
WSP, definition of........................ 14
Wyoming-South Dakota State line,
    Belle Fourche River at.............. 84-85, 257
  Murray Ditch at....................... 88, 258
  Redwater Creek at..................... 89, 258

Yankton, Beaver Creek near................205-208, 272
  James River near......................201-204, 272
  Lewis and Clark Lake near............. 158-159
  Missouri River at..................... 160, 267

Zooplankton, definition of................ 11

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons